XEROX

Xerox 4010 Electronic Laser Printer Service Manual

700P62832
August 1992

This Service Manual contains service information that applies to the Xerox 4010 IOT electronic laser printer.

NOTICE

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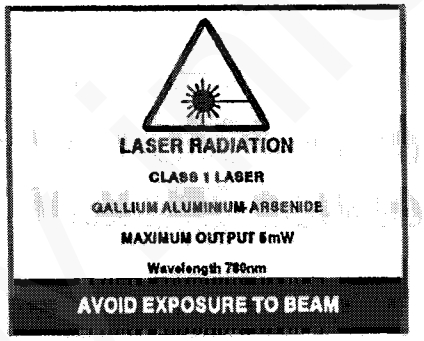
CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage

WARNING



CLASS 1 LASER PRODUCT

The Xerox 4010 electronic laser printer is certified to comply with Laser Product Performance Standards set by the U.S. Department of Health and Human Services as a Class 1 Laser Product. This means that this is a class of laser product that does not emit hazardous laser radiation; this is possible only because the laser beam is totally enclosed during all modes of customer operation.

The laser and output of the laser scanner unit produces a beam that, if looked into, could cause eye damage. Service procedures must be followed exactly as written without change.

When servicing the machine or laser module, follow the procedures specified in the manual and there will be no hazards from the laser.

Laser (FDA): Any laser label visible to service must be reproduced in the service manual with location shown or indicated. Safe working procedures and clear warnings concerning precautions to avoid possible exposure must also be included.

WARNING

This equipment complies with the requirements in Part 15 of FCC rules for a class A computing device. Operation of the equipment in a residential area may cause unacceptable interference to radio and TV reception, requiring the operator to take whatever steps are necessary to correct the interference.

Revision Control List

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Introduction

About This Manual

This manual is part of a multinational documentation system that includes product training. The manual includes information that applies to:

- US Marketing Group (USO)
- Rank Xerox Limited (RX)
- Xerox of Canada Inc. (XCI)

USO references always apply to XCI, unless an XCI difference is specifically noted. RX references always apply to the 50Hz version of the printer.

Publication Comment Sheets

A Publication Comment Sheet (PCS) is provided at the end of this manual.

Yellow Pages

Yellow pages contain service information. Service information includes service bulletins, transient information, hints and tips and service problems. Yellow pages are inserted at the end of the section(s) they apply to. In the Status Indicator RAPs section, yellow pages are inserted at the end of each functional chain.

Note Space

Pages that would otherwise have been left blank have been designated as note space. Use these pages for your own notes.

Generic RAPs

Generic RAPs are contained in Section 6. Generic RAPs are provided to assist with troubleshooting electrical circuits which have a common function throughout the printer; for example: switches, opto sensors, clutches, solenoids, DC motors. If a Flag symbol appears on the circuit diagram of the RAP you are working in, this indicates that there is a generic RAP to support the circuit.

Organization

This manual is divided into 8 sections:

Section 1. Service Call Procedures

Section 1 contains the following service procedures:

Call Flow Diagram

- The Call Flow Diagram indicates the steps that must be followed at every service call.

Initial Actions

- The Initial Actions identify the Call Ahead and On-Site procedures that must be performed.

Subsystem Maintenance

- The Subsystem Maintenance procedures identify the cleaning, lubricating and inspection actions that must be performed during a service call.

Repair Analysis Procedure

- The Repair Analysis Procedure maps the method to use in order to diagnose and repair the fault.

System Checkout

- The System Checkout is used to verify that the printer is operating correctly and to identify any system or image quality defects.

Final Actions

- The Final Actions identify the steps that must be performed before closing the service call.

Section 2. Status Indicator RAPs

Section 2 contains the Repair Analysis Procedures (RAPs) which are necessary to diagnose, isolate and repair system faults, other than image quality faults. When using a RAP, stop when the fault is fixed. Do not perform the remaining steps.

Section 3. Image Quality RAPs

Section 3 contains the Repair Analysis Procedures (RAPs) which are necessary to diagnose, isolate and repair image quality faults. When using a RAP, stop when the fault is fixed. Do not perform the remaining steps.

The first image quality RAP (IQ 1) is used to classify image quality problems and provide references to the RAP to be used to repair each problem.

Section 4. Repairs/Adjustments

Section 4 contains the removal and replacement procedures for major components. If a repair procedure is not included in this section, refer to the Parts List (Section 5) to remove or replace the component.

The Adjustments section contains all the field adjustment and cleaning procedures for the printer.

Section 5. Parts List

Section 5 contains the detailed parts list for the printer. The Parts List section includes exploded views of the printer and lists all available spare parts which may be needed to service the printer.

Section 6. General Procedures/Information

Section 6 contains generic service procedures, diagnostic procedures, generic RAPs and general information about the printer.

Section 7. Wiring Data

Section 7 contains wiring information, connector location drawings and references, PWB location drawings and references, and a component index which lists all serviceable components with references to service procedures.

Section 8. Accessories/Options

Section 8 contains service procedures and information which is applicable to accessories and options to the printer.

Introduction

How To Use This Manual

Start the service call at the Call Flow Diagram in Section 1, Service Call Procedures, which indicates the steps to be followed at every service call.

The **Initial Actions** in Section 1 identify the Call Ahead and On Site procedures that must be performed.

The **Repair Analysis Procedure** in Section 1 identifies the steps to be taken to determine the reason for the call and organize the actions that need to be taken.

After performing any corrective actions as directed, the **System Checkout** will be performed. The purpose is to verify that the printer is operating correctly.

After performing the System Checkout, you will be directed to **Final Actions** which contain a checklist of actions that must be performed at the end of each service call.

Repair Analysis Procedures (RAPs)

A RAP is a series of steps designed to lead you to the cause of a problem. Each step directs you to perform an action or observe an occurence. At each step a statement is made that has a YES (Y) or NO (N) answer.

If the answer is NO, perform the action following the NO statement. If the answer is YES, proceed to the next step.

When several actions are listed, perform the actions in the order that they are listed.

Proceed through the steps only until the problem is solved. Do not continue with the RAP after the problem is solved, but proceed to System Checkout in Section 1.

Warnings, Cautions and Notes

Warnings, Cautions and Notes appear before the steps they apply to. Always read Warnings, Cautions and Notes before continuing with a procedure.

WARNING

A Warning is used whenever an operating or maintenance procedure, practice, condition or statement, if not strictly observed, could result in personal injury.

CAUTION

A Caution is used whenever an operating or maintenance procedure, practice, condition or statement, if not strictly observed, could result in damage to the equipment.

NOTE: A note is used whenever it is essential to highlight an operating or maintenance procedure, practice, condition or statement.

Voltage Measurements and Tolerances

Voltage measurements and tolerances are quoted in the 1.5 Voltage Measurement RAP.

Cross References

PL 6.1 (example)

This example shows a reference to Parts List (Chain 6, Imaging, group function number 1).

REP 4.2 (example)

This example shows a reference to Repair procedure 4.2, (Chain 4, Drives, repair number 2).

ADJ 9.1 (example)

This example shows a reference to Adjustment procedure 9.1, (Chain 9, Xerographics, adjustment number 1).

Wire Colour Identification

Refer to Table 1. In order to identify wires on circuit diagrams the colour of the wire is shown under the signal or supply line. The following list shows the abbreviations that are used for wire colours:

Table 1. Wire Colours

Abbreviation	Colour
BLK	Black
BLU	Blue
BRN	Brown
GRN	Green
G/Y	Green/Yellow
GREY	Grey
ORN	Orange
PINK	Pink
RED	Red
VIO	Violet
WHT	White
YEL	Yellow

Reference Flags

When the statement, "go to Flag", appears in the RAP text, this implies that there is a corresponding Flag located on the Circuit Diagram. On circuit diagrams, Flags point to components which are supported by a generic RAP to assist with troubleshooting. Generic RAPs are located in Section 6, General Procedures (refer to the Reference Flag in Reference Symbology, page ix).

Reference Symbology

The following are symbols used in this document, together with their definitions:

Note

This symbol refers to notes, usually on the same page.

Test Point

This symbol identifies a test point on the printer.

Input Voltage

This symbol indicates that voltage is distributed throughout a component at this point.

Voltage Source

This symbol indicates that the voltage is sourced from this point.

Signal Flow

This symbol indicates the direction of signal flow.

Feedback Signal

This symbol indicates that the signal is a feedback signal.

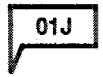
Reference Flag

This symbol indicates a reference flag from the RAP text to the circuit diagram. To assist with troubleshooting, refer to the Generic RAPs.

Input Flag

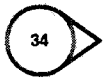
This symbol indicates an input flag reference *from* another circuit diagram.

Output Flag



This symbol indicates an output flag reference *to* another circuit diagram.

Tag/MOD Information



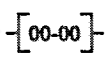
This symbol identifies the components or configuration of components in a group function that are part of a peripheral change identified with this Tag/MOD number.

This symbol identifies an entire drawing that has been changed by this Tag/MOD number.

This symbol identifies the components or configuration of components in a group function as they are without the peripheral change identified by this Tag/MOD number.

This symbol indicates an entire drawing as it is without the peripheral change identified by this Tag/MOD number.

Diagnostics

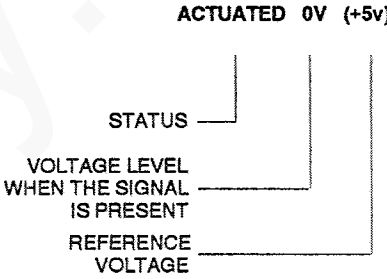


On a Circuit Diagram (CD), this symbol indicates that there is a diagnostic test available. The number indicates the input or output component test number.

On a CD, this symbol indicates a diagnostic fault code. The number indicates the functional chain and the event number. The hatched area identifies the microprocessor.

Signal Status

On a CD, the status of a signal line is expressed above the signal line. Input devices are identified as being actuated or deactuated; output devices are identified as being energized or deenergized.



Parts List Symbology

Parts List - Repair

When found on a parts list callout, this symbol indicates that there is a Repair procedure in Section 4 for that component.

Parts List - Adjustment

When found on a parts list callout, this symbol indicates that there is an Adjustment procedure in Section 4 for that component.

Parts List - Repair and Adjustment

When found on a parts list callout, this symbol indicates that there is a Repair and Adjustment procedure in Section 4 for that component.

Introduction

Tag/MOD Applicability

Refer to Figure 1. This manual is applicable to all printers that have not been modified beyond the standard indicated by the diagram of the TAG/MOD index card. Where a printer has been modified to a later standard, refer to the appropriate Tag/Modification instruction.

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Figure 1. Tag/MOD Applicability

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Section Contents

Call Flow Diagram

This Call Flow Diagram indicates the steps that must be followed at every service call.

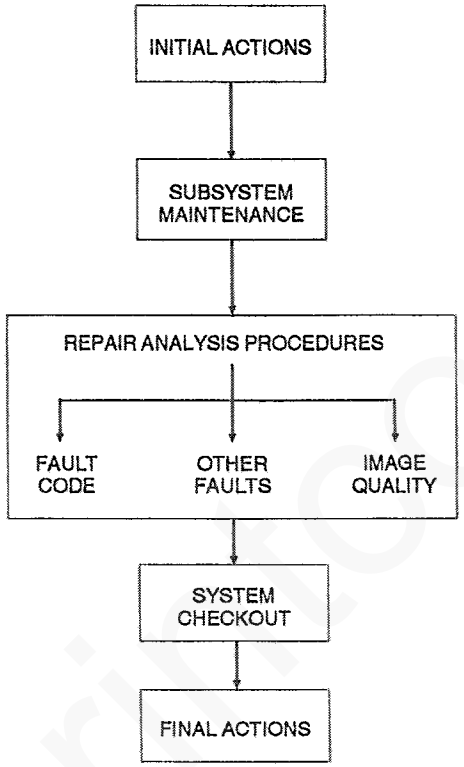


Figure 1. Call Flow Diagram

Initial Actions

Off Site and Call Ahead Procedure

1. Telphone the customer and ask the customer to describe the problem. Ask the customer to produce a Status Sheet, if possible
2. Refer to the Customer Call Assistance (CCA) Table, which shows the three types of symptoms that occur in the printer:
   a) The User Interface (UI) may display a "Status code".
   b) There may be an "Other fault".
   c) There may be an "Image quality defect".
3. Identify the "Fault" in the relevant Table.
4. When appropriate, ask the customer to perform the "Operator Action" described in the Table; the operator actions described may clear the status code or correct the problem without a service call.
5. If the operator actions do not clear the status code or correct the problem, a service call is required. Read the associated RAP indicated in the Table; note any parts you may need to complete the service call.

On Site

1. Go to Subsystem Maintenance in Section 1.

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
Status codes C5	• Load paper in paper tray 1. • Check that the tray 1 loading lever is lowered.	C5
C6	• Load paper in paper tray 2. • Check that the tray 2 paper tray is fully inserted.	C6
E1	• Follow the E1 TRAY 1 JAM clearance procedure described in Chapter 7 of the User Guide. • Check that both sides of tray 1 are fully inserted into the printer. • Inspect all components along the paper path for damage or obstructions.	E1
E2	• Follow the E2 TRAY 2 JAM clearance procedure described in Chapter 7 of the User Guide. • Inspect all components along the paper path for damage or obstructions.	E2
E3	• Follow the E3 CLEAR PAPER PATH clearance procedure described in Chapter 7 of the User Guide. • Inspect all components along the paper path for damage or obstructions.	E3
E4	• Follow the E4 EXIT JAM clearance procedure described in Chapter 7 of the User Guide. • Inspect all components along the paper path for damage or obstructions.	E4
E5	• Push the top cover down firmly until the latch engages.	E5
FC	• Install the font cartridge and press the ONLINE button.	FC
FE	• Switch the power to the printer off. Wait ten seconds and then switch the power to the printer on.	FE
J1	• Switch the power to the printer off. Install the print counter.	J1

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
J2	• Install the print cartridge. • Clean the two terminals on top of the print cartridge and the corresponding contacts underneath the laser scanner unit.	J2
J4	• Install a new print cartridge and print counter.	J4
J5	• Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit. • Ensure that there is adequate toner in the developer unit. • Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit. • Check that the toner motor belt is correctly installed, as described in Section 9 of the User Guide. • Clean the contacts and terminals in the printer, as described in Section 9 of the User Guide. • Reinstall the developer unit and print cartridge into the printer. • Install a new toner cartridge.	J5
J6	• **A service call is required.** (Press the RESET button to continue printing, until hard stop is reached; once the hard stop is reached, no further printing can be performed until the printer is serviced).	J6

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
J7	• Check that the printer is on a level surface. • Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit. • Ensure that the printer has the correct toner cartridge installed. • Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit. • Clean the contacts and terminals in the printer, as described in Section 9 of the User Guide. • Reinstall the developer unit and print cartridge into the printer. • Install a new toner cartridge. • Switch the power to the printer off. Wait ten seconds and then switch the power to the printer on. (Press RESET to continue printing).	J7
U2	• Switch the power to the printer off. Wait ten seconds and then switch the power to the printer on.	U2
U3	• See Fault U2. Same actions.	U3
U4	• See Fault U2. Same actions.	U4
U5	• Switch the power to the printer off. Wait ten seconds and then switch the power to the printer on. • Inspect the corotrons for damage. • Clean the contacts and terminals in the printer, as described in Section 9 of the User Guide.	U5
U6	• Check that the fan outlet is not covered, and inspect the area around the fan for an obstruction that would stop the fan rotating (if necessary remove the ozone filter to gain a view of the fan).	U6
01	• See Fault U2. Same actions.	01

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
02	• Switch the power to the printer off. Wait ten seconds and then switch the power to the printer on. (Press the RESET button to select the HP Laserjet II emulation).	02
03	• See Fault 02. Same actions.	03
04	• See Fault 02. Same actions.	04
14	• See Fault U2. Same actions	14
15	• Switch the power to the printer off and remove the faulty font or emulation cartridge.	15
16	• Select BIT MAP = FULL in the printer configuration menu; additional memory may be required to allow complex documents to be printed. (Press the RESET button to clear the error code).	16
17	• Check that there is uninterrupted power from the wall outlet.	17
18	• Check that paper of the correct size is being used, and that the printer configuration and computer software settings correspond to the size of paper being used.	18
40 to 47	• Check the printer configuration and computer software settings for the serial interface. • Check that the host to printer serial interface cable is not too long. The maximum length is 15 metres.	40 to 47
52	• Switch the power to the printer off. Wait ten seconds and then switch the power to the printer on. • Switch the power to the printer off and remove the optional memory from the printer.	52
54	• See Fault 52. Same actions.	54

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
56	• See Fault 52. Same actions.	56
58	• See Fault 52. Same actions.	58
59	• See Fault U2. Same actions.	59
71, 72	• Check that paper of the correct size is being used, and that the printer configuration and computer software settings correspond to the size of paper being used.	71, 72
81, 82	• If the paper tray is empty, manually feed the requested paper or envelope. • If the requested paper or envelope is already in the tray, press the RESET button.	81, 82
Other faults Blank display / printer is dead	• Check that there is power from the wall outlet. • Switch off the power to the printer. Reinstall the ESS controller PWBA.	OF 1
Does not respond to host	• Check that printer configuration and computer software settings are correct for the interface being used. • Switch off the power to the printer and computer and re-install the interface cable connectors.	OF 4
Does not save configuration settings	• Note that some items in the printer configuration menu can only be set temporarily. Refer to Section 4 of the User Guide for full details.	OF 5

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
Noise	• Ensure that the paper weight is acceptable (60 gsm to 105 gsm). • If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic use. • Inspect the printer for foreign material (i.e. paper, staples, paper clips). • Inspect all components along the paper path for damage or obstructions. • Ensure that the developer unit and print cartridge are properly installed.	OF 7
ESS lockups	• Switch off the power to the printer and either reset or switch off the host computer. Wait ten seconds and then switch the power to the printer and the host computer on.	OF 8

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
Image quality defects Background	• Check the print density setting; set the print density to the middle of the range, as described in Section 5 of the User Guide. • Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit. CAUTION *When cleaning and inspecting the print cartridge, take care not to touch the green photoreceptor.* • Carefully wipe any excess toner off the outside of the print catridge, using a dry cleaning cloth; do not touch the photoreceptor. • Inspect the photoreceptor on the print cartridge for damage; replace the print cartridge if necessary. • Ensure that the printer has the correct toner cartridge installed. • Clean the paper path in the printer, as described in Section 7 of the User Guide. • Clean the contacts and terminals in the printer, as described in Section 9 of the User Guide. • Clean the corotron wires, as described in Section 7 of the User Guide. • Reinstall the developer unit and print cartridge into the printer.	IQ 2

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
Blank prints	• Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit. • Ensure that there is adequate toner in the developer unit. • Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit. • Check that the toner motor belt is correctly installed, as described in Section 9 of the User Guide. • Clean the contacts and terminals in the printer, as described in Section 9 of the User Guide. • Reinstall the developer unit and print cartridge into the printer.	IQ 3
Character defects	• Check that the printer, host computer and software are correctly configured. • Check that the host to printer interface cable is not too long. The maximum permissible length is: Centonics parallel - 10 metres Serial RS232C - 15 metres. • Switch the power to the printer off. Wait ten seconds and then switch the power to the printer on.	IQ 4
Damaged prints	• Ensure that the paper weight is acceptable (60 gsm to 105 gsm). • Check the paper for dampness; load fresh paper into the paper tray if necessary. • If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic use. • Inspect all components along the paper path for damage or contamination, or obstructions that could damage the paper. • Clean the paper path in the printer, as described in Section 7 of the User Guide.	IQ 5

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
Deletions	• Ensure that the paper weight is acceptable (60 gsm to 105 gsm). • Check the paper for dampness; load fresh paper into the paper tray if necessary. • If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic use. • Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit. • Ensure that the printer has the correct toner cartridge installed. • Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit. CAUTION *When cleaning and inspecting the print cartridge, take care not to touch the green photoreceptor.* • Inspect the photoreceptor on the print cartridge for damage; replace the print cartridge if necessary. • Clean the developer unit, as described in Section 7 of the User Guide. • Clean the contacts and terminals in the printer, as described in Section 9 of the User Guide. • Inspect all components along the paper path for damage, contamination or obstructions. • Clean the corotron wires, as described in Section 7 of the User Guide. • Reinstall the developer unit and print cartridge into the printer.	IQ 6
Extraneous marks	• See Deletions. Same actions.	IQ 7

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
Light image	• Check the print density setting; set the print density to the middle of the range, as described in Section 5 of the User Guide. • Check the paper for dampness; load fresh paper into the paper tray if necessary. • Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit. • Ensure that the printer has the correct toner cartridge installed. • Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit. • Clean the contacts and terminals in the printer, as described in Section 9 of the User Guide. • Clean the corotron wires, as described in Section 7 of the User Guide. • Reinstall the developer unit and print cartridge into the printer.	IQ 8
Misregistration	• Ensure that the tray 1 paper guides are correctly adjusted, so that the mylar flaps are just pressing on both sides of the paper. • Check that the tray 1 loading lever is lowered. • Check that the paper in tray 2 (if fitted) is under the snubbers. • Inspect all components along the paper path for damage or obstructions.	IQ 9

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
Residual image	• Clean the paper path, as described in Section 7 of the User Guide. • Ensure that the paper weight is acceptable (60 gsm to 105 gsm). • If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic use. • Ensure that the printer has the correct toner cartridge installed. • Clean the contacts and terminals in the printer, as described in Section 9 of the User Guide. • Clean the corotron wires, as described in Section 7 of the User Guide.	IQ 10
Skewed image	• Ensure that the paper weight is acceptable (60 gsm to 105 gsm). • If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic use.	IQ11
Unfused image	• Ensure that the paper is not rough, heavily textured, or of rag content. • Check the paper for dampness; load fresh paper into the paper tray if necessary. • Ensure that the printer has the correct toner cartridge installed.	IQ 12
Lines / streaks	• Clean the paper path in the printer, as described in Section 7 of the User Guide. • Clean the corotron wires, as described in Section 7 of the User Guide.	IQ 13

Customer Call Assistance (CCA) Table

Fault	Operator Action	RAP
Varying image quality	• Ensure that the paper weight is acceptable (60 gsm to 105 gsm). • If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic use. • Check the paper for dampness; load fresh paper into the paper tray if necessary. • Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit. • Ensure that the printer has the correct toner cartridge installed. • Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit. • Clean the paper path, as described in Section 7 of the User Guide. • Clean the contacts and terminals in the printer, as described in Section 9 of the User Guide. • Clean the corotron wires, as described in Section 7 of the User Guide. • Reinstall the developer unit and print cartridge into the printer.	IQ 14

Subsystem Maintenance

Procedure

1. Switch off the printer power and disconnect the power cord.
2. Place a drop cloth on the work area.
3. Perform the required actions listed in Table 1.
4. Dispose of all used cleaning materials.
5. Restore the printer to operating condition.
6. Review the user cleaning procedures for the printer (as specified in the User Guide) with the customer. Also, review the replacement procedure for the fuser cleaning pad with the customer. (Refer to the User Guide if necessary).
7. Go to the Repair Analysis Procedure flowchart in Section 1.

Subsystem	Every Call Action	Action For Subsystem Being Repaired	Materials	
			USO / XCI	RX
Right side frame drive gears (ADJ 4.1)		Inspect/Lubricate	Oil (Tellus 68)	Oil (Tellus 68)
ROS window (ADJ 6.2)	Clean		Cloth	Cloth
Paper path (ADJ 8.1)	Clean		Cloth	Cloth
Cassette feed roller gear (ADJ 7.2)		Inspect/Lubricate	Oil (Tellus 68)	Oil (Tellus 68)
Paper feed rollers		Inspect		
High voltage terminals and contacts (ADJ 9.1)		Clean	Cotton swab	Cotton swab
Transfer/detack corotron wires (ADJ 9.2)	Clean		Cotton swab	Cotton swab
Photoreceptor corotron wire (ADJ 9.3)	Clean		Cotton swab	Cotton swab
Developer unit drive gears (ADJ 9.5)		Inspect/Lubricate	Oil (Tellus 68) and Silicone grease	Oil (Tellus 68) and Silicone grease
Fuser assembly (ADJ 10.2)		Clean	Cotton swab	Cloth, brush
Fuser cleaning pad	Inspect/Replace			
Frame spring (ADJ 14.1)	Inspect/Lubricate		Conductive grease	Conductive grease

Table 1. Inspection, Cleaning and Lubrication

Repair Analysis Procedure

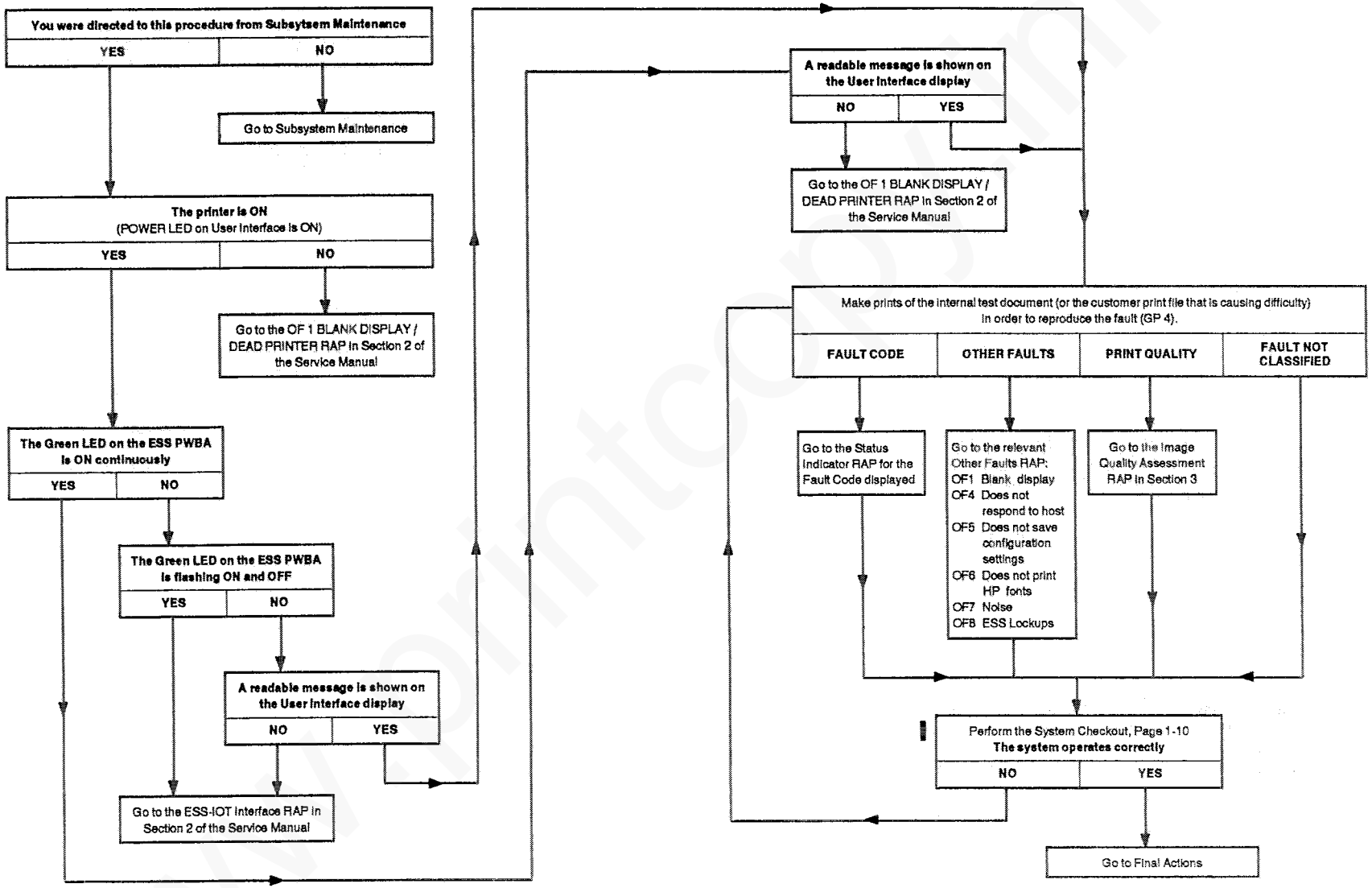


Figure 1. Repair Analysis Procedure

System Checkout

Purpose

The purpose of the System Checkout is to check the total operation of the printer; it is used at the end of a service call to ensure that the equipment is performing to operational specifications.

Procedure

1. If you have reconfigured the printer during the course of the call, restore it to the configuration in effect prior to the service call (GP 1.1, GP 1.2 or GP 1.3).
2. Check the printer ground continuity (ADJ 10.3).
3. Load the paper trays with paper. Ensure that transparencies, labels and other special feed stock are not loaded in either of the trays. The following are the minimum requirements:
   - Load Tray 1 with at least twenty sheets of A4 or 8.5 x 11.
   - Load Tray 2 (if fitted) with at least twenty sheets of A4 or 8.5 x 11.
4. Set the paper path select lever to the face down position and then generate two Internal Test Document prints (GP 4).
5. Use the solid area density tool (82P520) to measure the density of the solid black squares on the test print. **All of the squares measure equal to or greater than 0.8.**

   Y N

   | Go to the IQ 8 Light Image RAP in Section 3.

   Go to step 6.
6. Check the #1 lines on the test prints. **The #1 lines on the test prints are present and unbroken.**

   Y N

   | Go to the IQ 8 Light Image RAP in Section 3.

   Go to step 7.
7. Check the test prints for extraneous marks or character defects. **The test prints are free from extraneous marks and character defects.**

   Y N

   | Go to the Image Quality Entry RAP in Section 3.

   Go to step 8.
8. Ask the customer to send a single page job of 10 prints, feeding from Tray 1. **The printer functions correctly.**

   Y N

   | Go to the Repair Analysis Procedure flowchart in Section 1, to identify and repair the fault.

   Go to step 9.
9. Set the paper path select lever to the face up position and then ask the customer to send a single page job of 10 prints, feeding from Tray 2. **The printer functions correctly.**

   Y N

   | Go to the Repair Analysis Procedure flowchart in Section 1 to identify and repair the fault.

   Go to Final Actions.

Final Actions

Purpose

The purpose of Final Actions is to provide a checklist of actions that must be performed at the end of every service call and to identify any actions necessary to clear the call with the customer.

Procedure

After successful completion of the System Checkout, continue with the following actions:

Cooling Fan

Ensure that the cooling fan is running.

Clean the printer and the service area

1. Remove any toner spillages.
2. Table 1. Use the following cleaning materials to clean the covers:

Table 1. Printer Cleaning Materials

USO / XCI	RX
TBD	General Cleaning Solvent
Towel	Cleaning Cloth

Complete the service log and tag index

1. Complete the service log, recording all service actions performed.

Final Check

Ensure that the printer and the service area are clean before leaving.

2. Status Indicator Repair Analysis Procedures

Section Contents

Introduction

This section contains Status Code Repair Analysis Procedures (RAPs), Other Faults RAPs and Electrical RAPs.

The RAPs for alphanumeric status codes appear first, in alphanumeric order. They are followed by the RAPs for numeric status codes, then by the Other Faults RAPs, then by the Electrical RAPs in numeric order.

C5 TRAY 1 EMPTY

Fault code C5 TRAY 1 EMPTY indicates the control logic has detected that the input paper switch does not detect the presence of paper in tray 1.

Procedure

Remove the user interface panel REP 2.2. Disconnect CN8 from the IOT controller PWBA and connect a meter between the two wires leading to the input paper switch. **There is continuity when the switch is actuated and an open circuit when the switch is de-actuated.**

Y **N**

Disconnect the wiring connector attached to the input paper switch, and make a check for continuity of the red and brown wires between this connector and CN8. **There is continuity in both wires.**

Y **N**

Repair the wiring.

Install a new input paper switch REP 7.4. Perform the System Checkout in Section 1.

Examine the input paper cassette for a defect that would stop the paper from being lifted up to actuate the input paper switch. Repair the defect or install a new input paper cassette (PL 3).

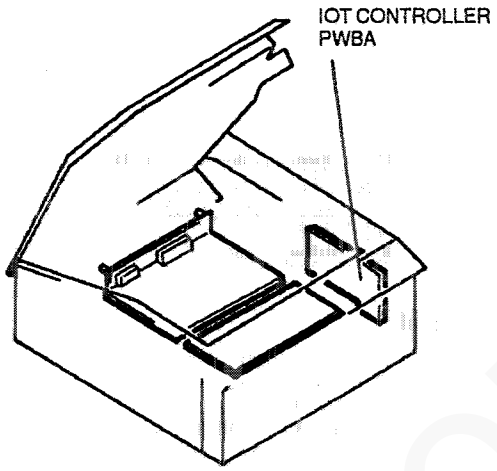


Figure 1. Component location

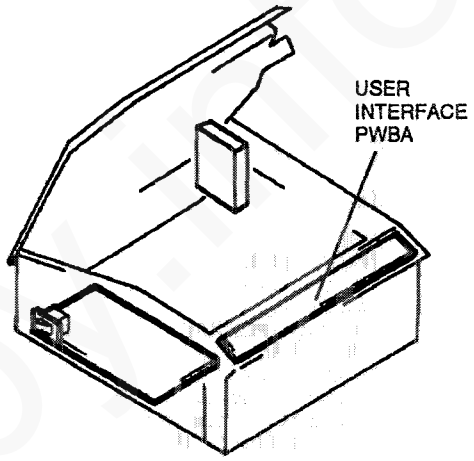


Figure 2. Component location

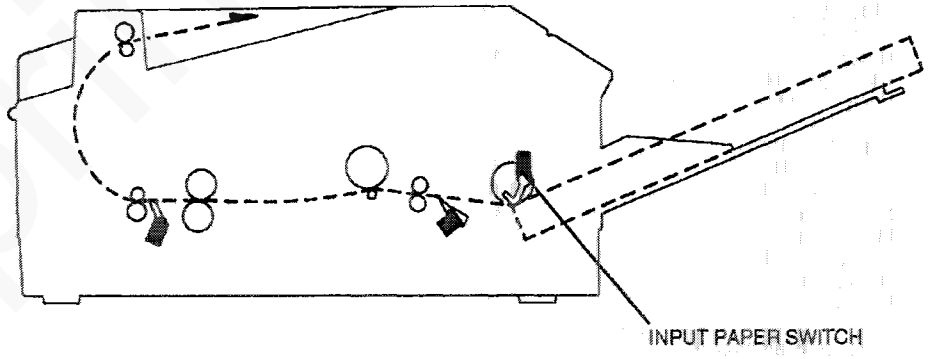
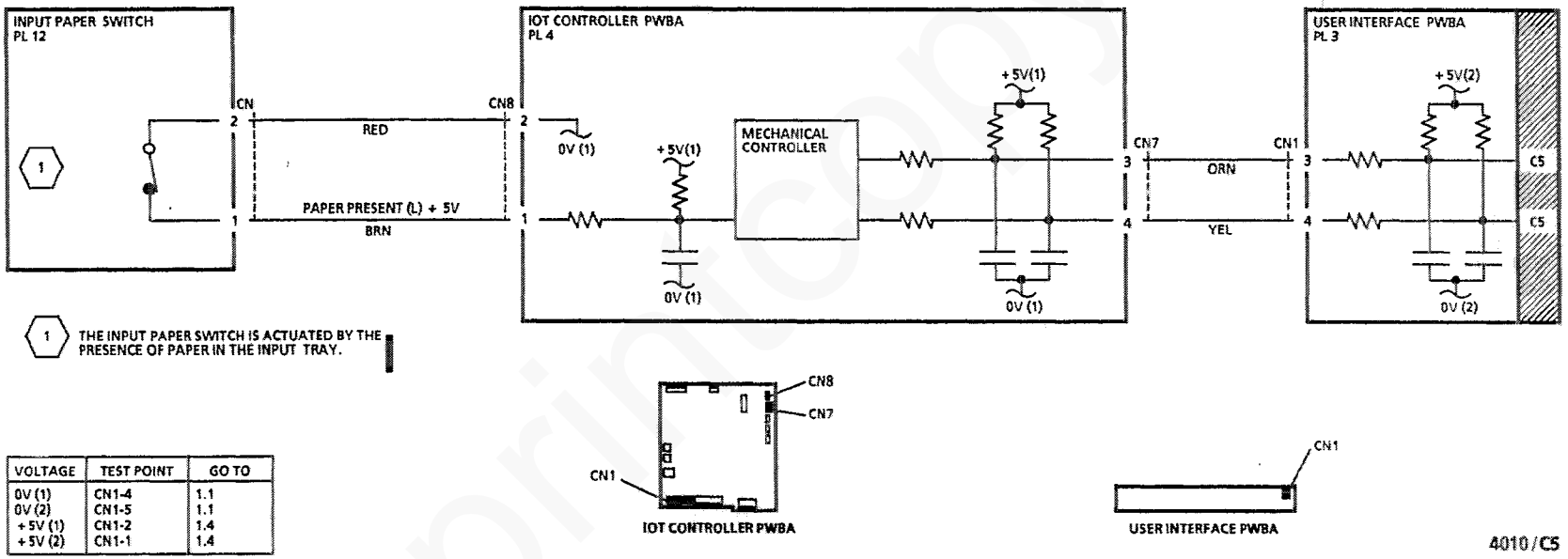


Figure 3. Component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-4	1.1
0V (2)	CN1-5	1.1
+5V (1)	CN1-2	1.4
+5V (2)	CN1-1	1.4

Figure 4. C5 circuit diagram

C6 TRAY 2 EMPTY

Fault code C6 TRAY 2 EMPTY indicates the control logic has detected that the optional tray 2 paper present sensor does not detect the presence of paper in tray 2.

Procedure

Pull out the optional tray 2, manually operate the tray 2 paper present sensor actuating arm. **The message C6 TRAY 2 EMPTY disappears and is replaced by the normal ready to print message.**

Y N

Install a new tray 2 paper feed sensor (PL 18). **The message C6 TRAY 2 EMPTY disappears and is replaced by the normal ready to print message.**

Y N

Install a new tray 2 PWBA (PL 3.8). Perform the System Checkout in Section 1.

Perform the System Checkout in Section 1.

Examine the tray 2 paper cassette for a defect that would stop the paper from being lifted up to actuate the tray 2 paper present sensor. Examine the mechanical parts of the sensor for a defect or contamination that would prevent the arm from moving freely. Repair the defect or install a new tray 2 input paper cassette (PL 17). Perform the System Checkout in Section 1.

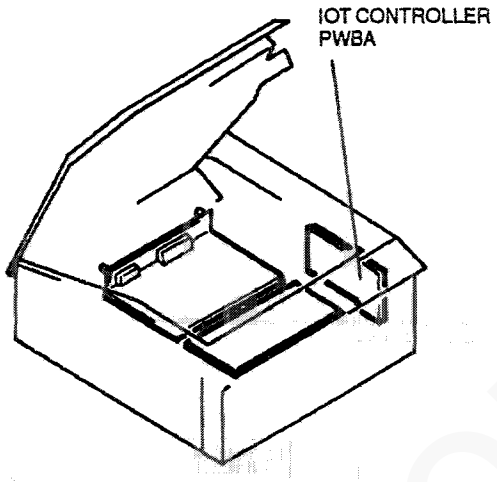


Figure 1. Component location

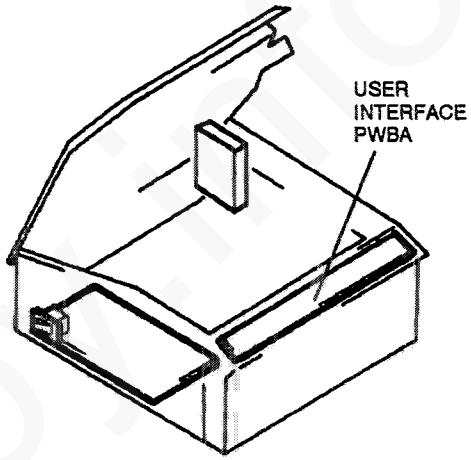


Figure 2. Component location

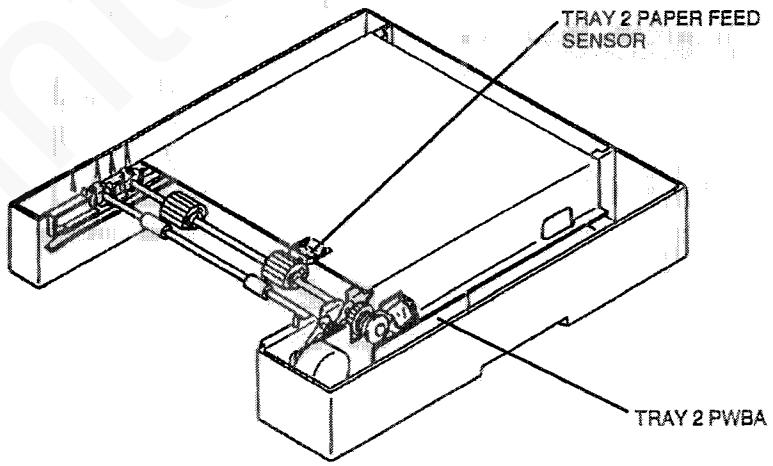
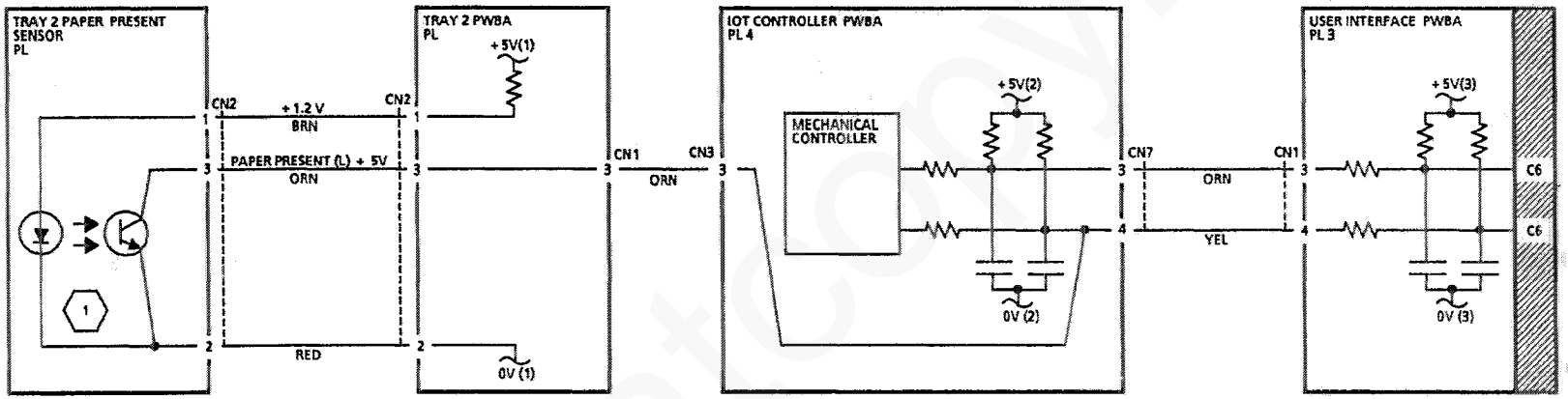


Figure 3. Component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-5	1.1
0V (2)	CN1-4	1.1
0V (3)	CN1-5	1.1
+ 5V (1)	CN1-2	1.4
+ 5V (2)	CN1-2	1.4
+ 5V (3)	CN1-1	1.4

Figure 4. C6 circuit diagram

E1 TRAY 1 JAM

Fault code E1 TRAY 1 JAM indicates the control logic has detected a misfeed or paper jam from tray 1.

Procedure

Clear the paper path of any obstructions, and check that the paper tray is fully located in its mounting slots. Send another print from the host. **Fault code E1 TRAY 1 JAM is displayed.**

Y N

Perform the System Checkout in Section 1.

Install a service print counter, send another print from the host. **Fault code E1 TRAY 1 JAM is displayed.**

Y N

Install a new print counter and print cartridge PL 1. Perform the System Checkout in Section 1.

Turn the machine off, place a piece of sticky tape over the actuator arm of the timing sensor so that it is held level with the surface of the paper guide and turn the machine on at the on/off switch. **Fault code E3 CLEAR PAPER PATH is displayed.**

Y N

Install a new timing sensor REP 8.1. Perform the System Checkout in Section 1.

Remove the developer unit and print cartridge from the machine, place the print cartridge in a lightproof bag. Remove the sticky tape from the paper guide and depress the interlock actuator using the interlock cheater. **The Paper Feed Roller and Fuser Assembly rollers turn for a few seconds.**

Y N

Remove the drive motor REP 4.1. Reconnect the drive motor and all other connectors to the IOT controller PWBA and reinstall the IOT controller PWBA. Place the drive motor on top of the IOT controller shield. Turn the machine on at the on/off switch and depress the interlock switch using an interlock cheater. **The motor shaft turns for a few seconds.**

Y N

Repeat the above procedure and, using a multimeter, check drive motor output at IOTC PWBA. **The output is good.**

Y N

Replace IOTC PWBA (REP 3.1).

Check continuity of wiring and motor. Repair or replace as required.

Remove the right side frame assembly REP 4.3, and inspect the gears for damage or a blockage that would prevent the drives from turning.

A

A

Clear the blockage, repair the damage, or if necessary install a new right side frame assembly REP 4.3. Perform the System Checkout in Section 1.

Reassemble the printer for operation. Look along the top of the paper cassette at the paper feed roll. Generate a print.

The paper feed roll turns.

Y N

Generate a print and, using a multimeter, check the output from the IOTC PWBA for the paper feed solenoid. **The output is good.**

Y N

Replace the IOTC PWBA (REP 3.1).

Check continuity of wiring and paper feed solenoid. Check paper feed solenoid adjustment. (ADJ 7.1) Repair, replace or adjust where necessary.

- Examine the paper in tray 1 for damage and replace the paper if necessary.
- Clean the paper feed roller, pinch roller and paper guides.
- Perform the System Checkout in Section 1.

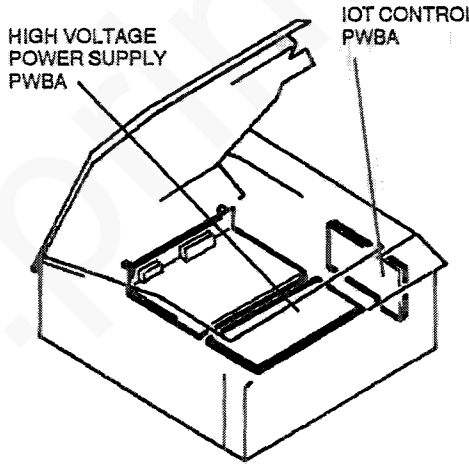


Figure 1. Component location

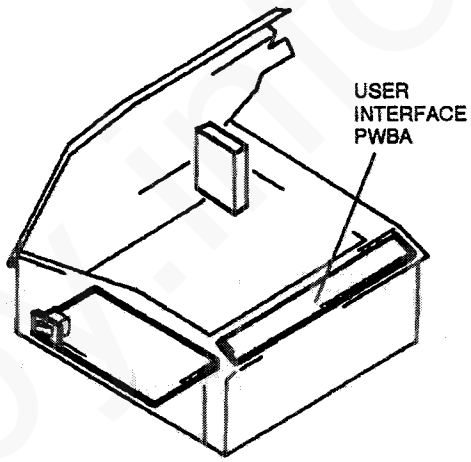


Figure 2. Component location

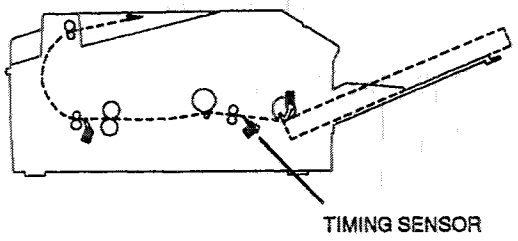
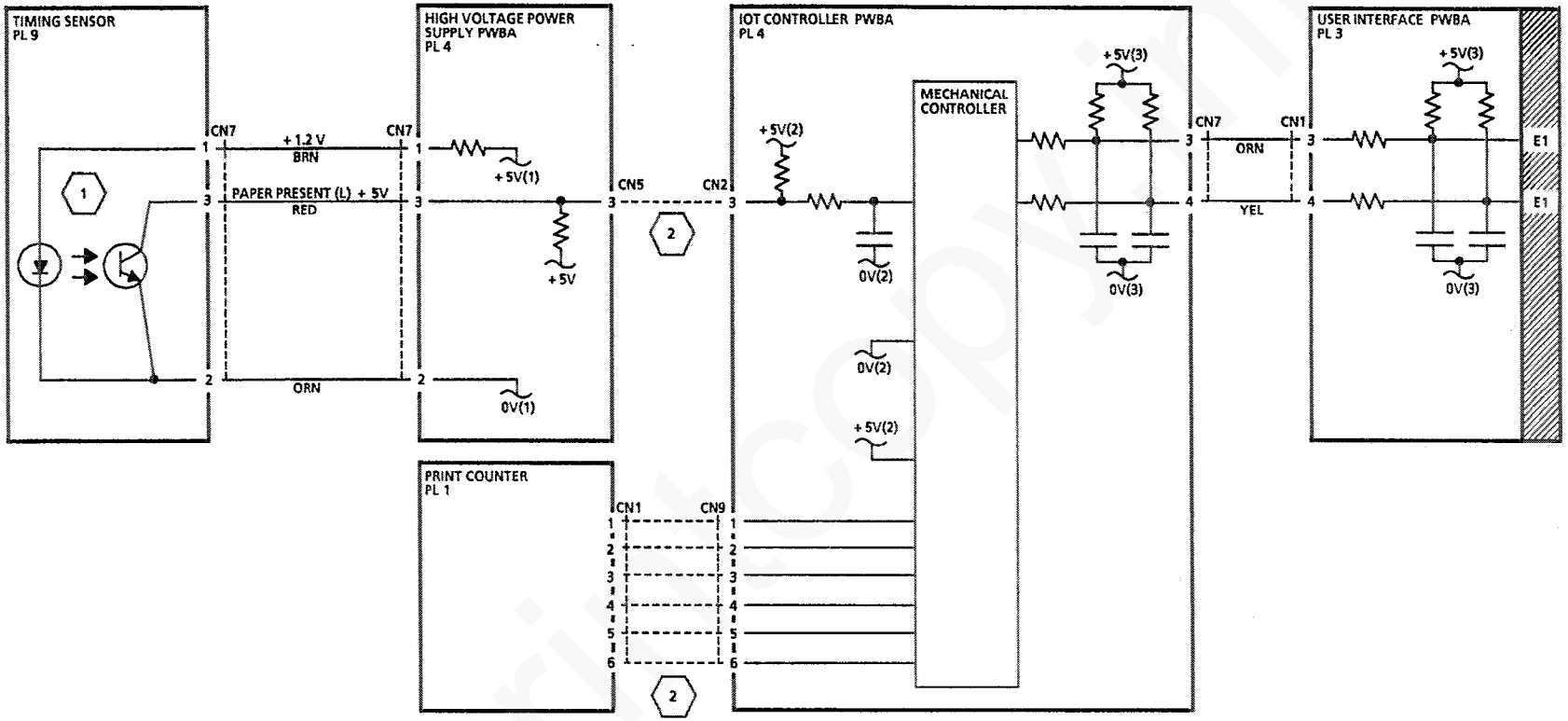


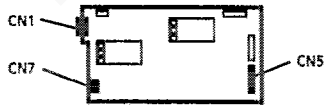
Figure 3. Component location



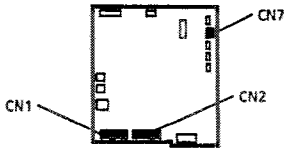
1 LIGHT PATH IS INTERRUPTED BY A MECHANICAL FLAG WHEN PAPER IS NOT IN CONTACT WITH THE FLAG.

2 BOARD TO BOARD CONNECTOR

VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-1	1.1
0V (2)	CN1-4	1.1
0V (3)	CN1-5	1.1
+ 5V (1)	CN1-3	1.4
+ 5V (2)	CN1-2	1.4
+ 5V (3)	CN1-1	1.4



HIGH VOLTAGE POWER SUPPLY PWBA



IOT CONTROLLER PWBA

USER INTERFACE PWBA

4010/E1

Figure 4. E1 circuit diagram

E2 TRAY 2 JAM

Fault code E2 TRAY 1 JAM indicates the control logic has detected a misfeed or paper jam from tray 2.

Procedure

Clear the paper path of any obstructions. Send another print from the host. **Fault code E2 TRAY 2 JAM is displayed.**

Y N

Perform the System Checkout in Section 1.

Turn the machine off, place a piece of sticky tape over the actuator arm of the timing sensor so that it is held level with the surface of the paper guide and turn the machine on at the on/off switch. **Fault code E3 CLEAR PAPER PATH is displayed.**

Y N

Install a new timing sensor REP 8.1. Perform the System Checkout in Section 1.

Switch off the printer power, remove the print counter and install a service print counter; switch the printer power on. **Fault code E3 CLEAR PAPER PATH is displayed.**

Y N

Install a new print cartridge and print counter. Perform the System Checkout in Section 1.

Perform the following checks:

- Examine the paper in tray 2 for damage and replace the paper if necessary.
- Remove tray 2 from the printer (REP 7.5 in Section 8).
- Clean the tray 2 paper feed roller, pinch roller and paper guides (PL 18 in Section 8).
- Remove the tray 2 motor (REP 4.6 in Section 8). Examine the motor and gears for an obstruction or damage that would prevent them from turning freely. If necessary install new parts.
- Examine the tray 2 motor for any exessive tightness that would prevent it from rotating at the correct speed. If necessary install new parts.

Reinstall tray 2 and switch the printer power on. **Fault code E3 CLEAR PAPER PATH is displayed.**

Y N

Perform the System Checkout in Section 1.

Replace the following parts in the order given:

- Tray 2 PWBA (PL19).
- Cassette feed solenoid (PL19).
- Tray 2 motor (PL19).

Perform the System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

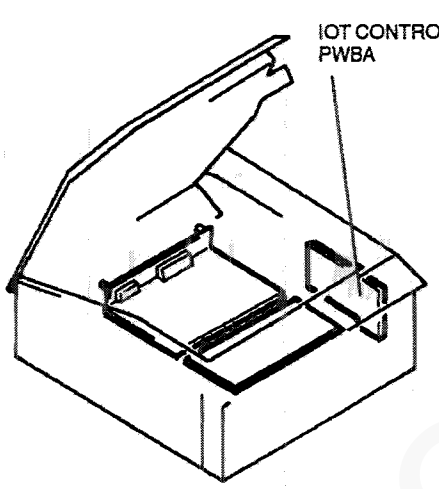


Figure 1. Component location

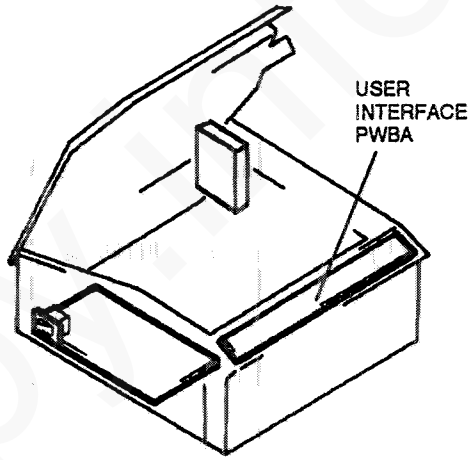


Figure 2. Component location

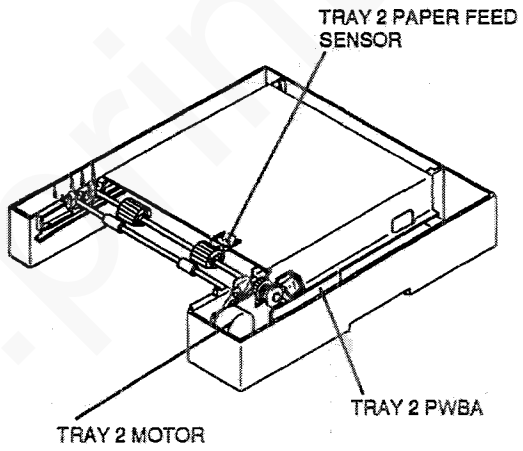


Figure 3. Component location

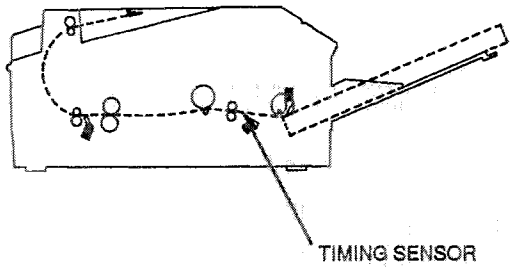
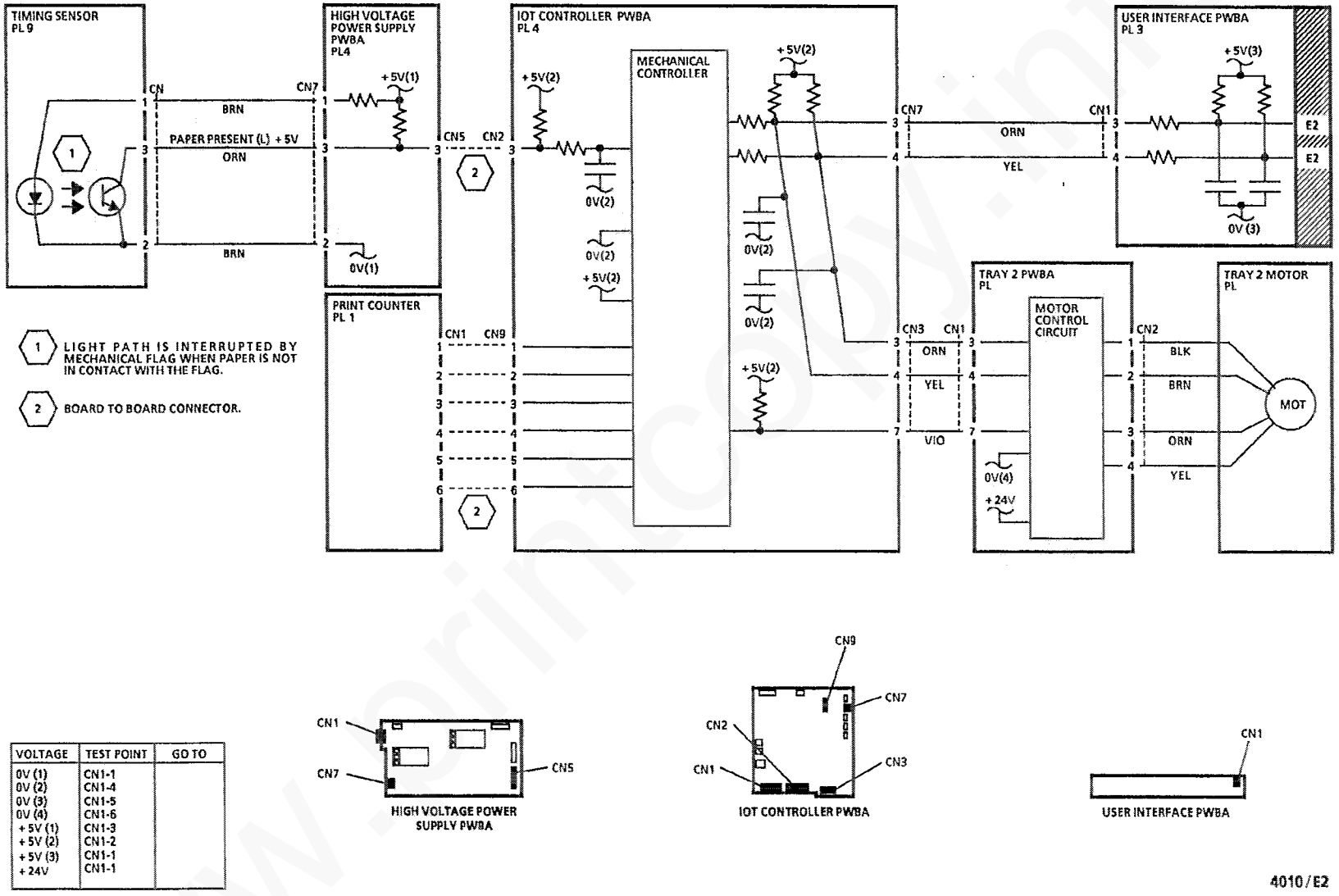


Figure 4. Component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-1	
0V (2)	CN1-4	
0V (3)	CN1-5	
0V (4)	CN1-6	
+ 5V (1)	CN1-3	
+ 5V (2)	CN1-2	
+ 5V (3)	CN1-1	
+ 24V	CN1-1	

Figure 5. E2 circuit diagram

E3 CLEAR PAPER PATH

Fault code E3 CLEAR PAPER PATH indicates the control logic has detected paper is present at the timing sensor or the paper output switch prior to making a print.

Initial Actions

Clear the paper path of paper. Check for obstructions or small pieces of torn paper at the timing sensor and the paper output switch.

Procedure

Make one print. **The message E3 CLEAR PAPER PATH is displayed.**

Y N

| Perform the System Checkout in Section 1.

Remove the right side cover REP 14.3, disconnect CN13 on the IOT controller PWBA. Connect a meter between the two wires that lead to the paper output switch. **There is continuity when the switch is de-actuated and an open circuit when the switch is actuated.**

Y N

| Install a new paper output switch REP 10.2. Perform the System Checkout in Section 1.

Examine the timing sensor to ensure that the sensor arm is free to pivot, check the wiring harness between the sensor and the high voltage power supply PWBA for continuity and ensure that the connectors are correctly seated. Repair or replace any faulty parts. Make one print. **The message E3 CLEAR PAPER PATH is displayed.**

Y N

| Perform the System Checkout in Section 1.

Install a new timing sensor REP 8.1. Perform the System Checkout in Section 1.

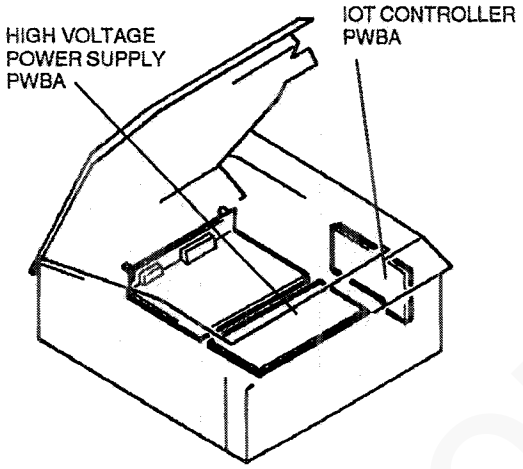


Figure 1. Component location

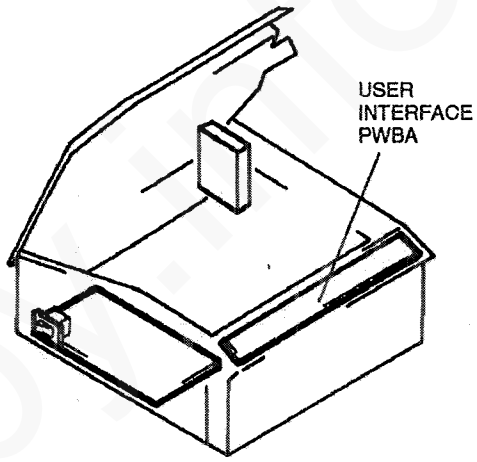


Figure 2. Component location

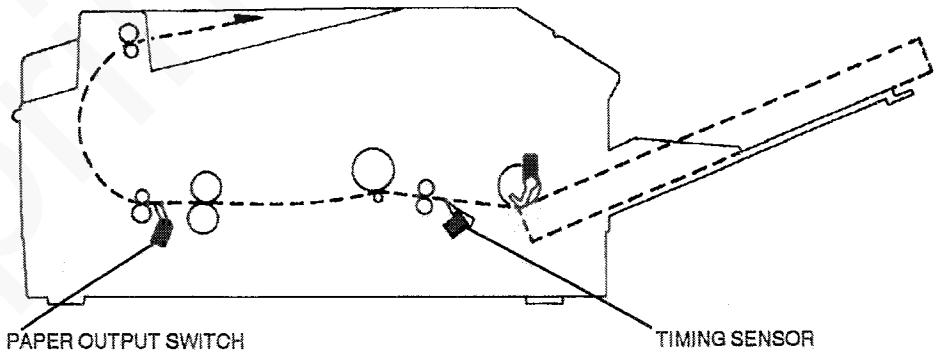
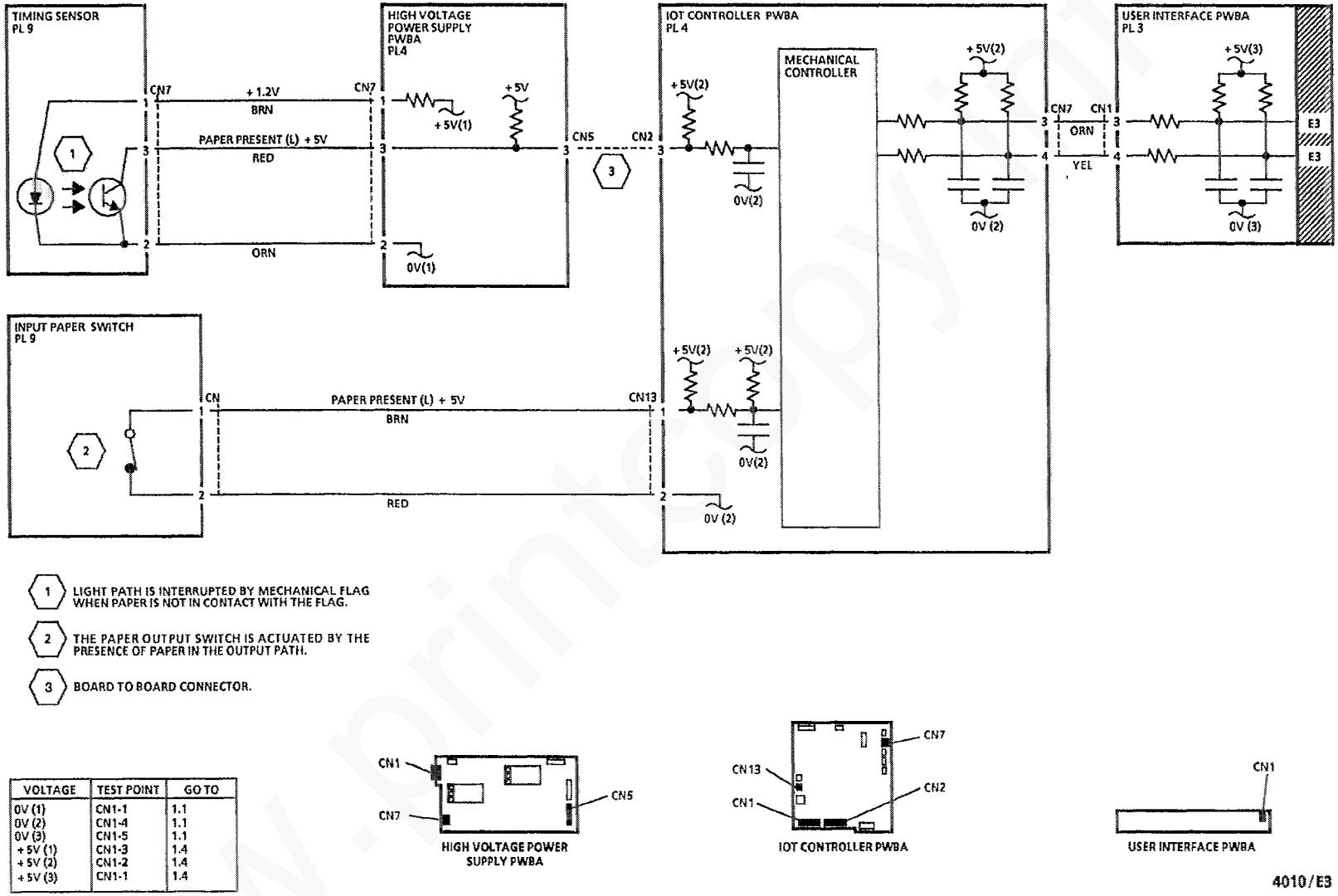


Figure 3. Component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-1	1.1
0V (2)	CN1-4	1.1
0V (3)	CN1-5	1.1
+ 5V (1)	CN1-3	1.4
+ 5V (2)	CN1-2	1.4
+ 5V (3)	CN1-1	1.4

Figure 4. E3 circuit diagram

E4 EXIT JAM

Fault code E4 EXIT JAM indicates the control logic has detected that a print has not cleared the paper output switch.

WARNING

The fuser cleaning pad is impregnated with silicon oil. Avoid touching the surface of the cleaning pad. Do not allow silicon oil to come into contact with the eyes or other sensitive parts of the body.

Procedure

Examine the output paper path beyond the fuser assembly for any damage or blockage that could cause a jam. **The paper path is clear.**

Y N

Remove the blockage, or remove any damaged component and repair or install new components.

Remove the developer unit and print cartridge from the machine, place the print cartridge in a lightproof bag. Depress the interlock actuator using the interlock cheater. **The paper exit drive gear and Fuser Assembly rollers turn for a few seconds.**

Y N

Observe the black drive gear inside the right side frame assembly that drives the fuser. Depress the interlock actuator using the interlock cheater. **The black drive gear turns for a few seconds.**

Y N

Install a new right side frame assembly REP 4.3. Perform the System Checkout in Section 1.

Install a new fuser assembly REP 10.1. Perform the System Checkout in Section 1.

Inspect the following components for wear or damage, install new components as necessary:

- Divert gate REP 11.2.
- Exit roller assembly (lower) REP 11.3.
- Output rollers REP 11.6.

Perform the System Checkout in Section 1.

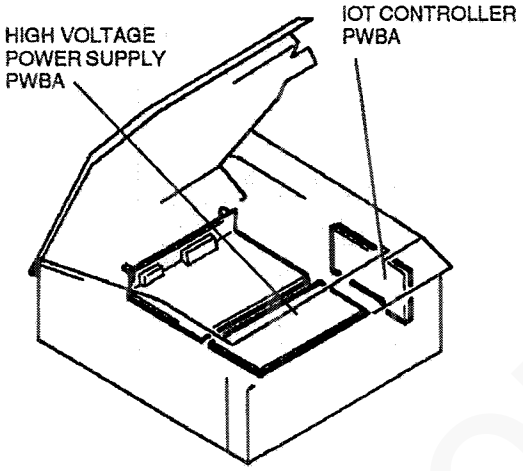


Figure 1. Component location

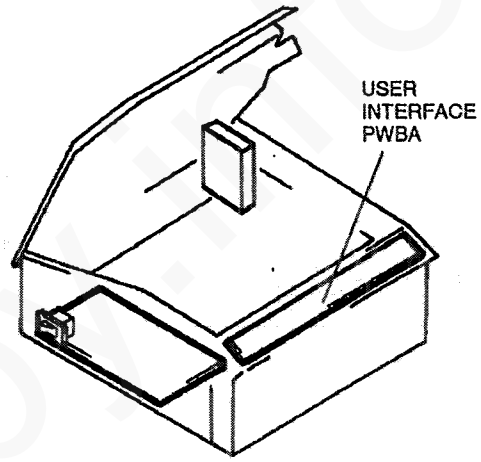


Figure 2. Component location

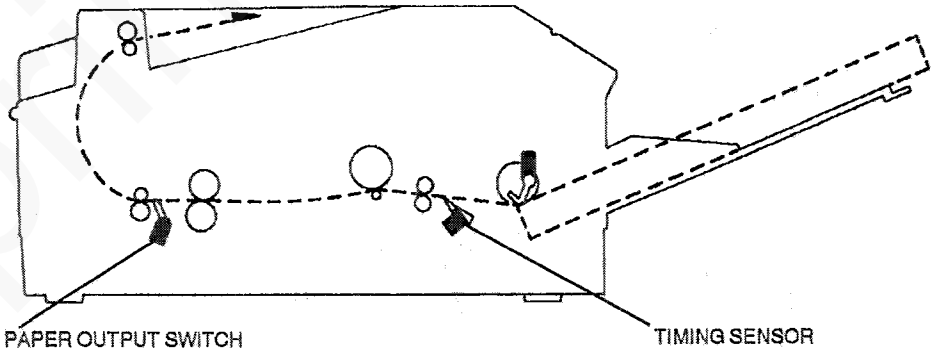
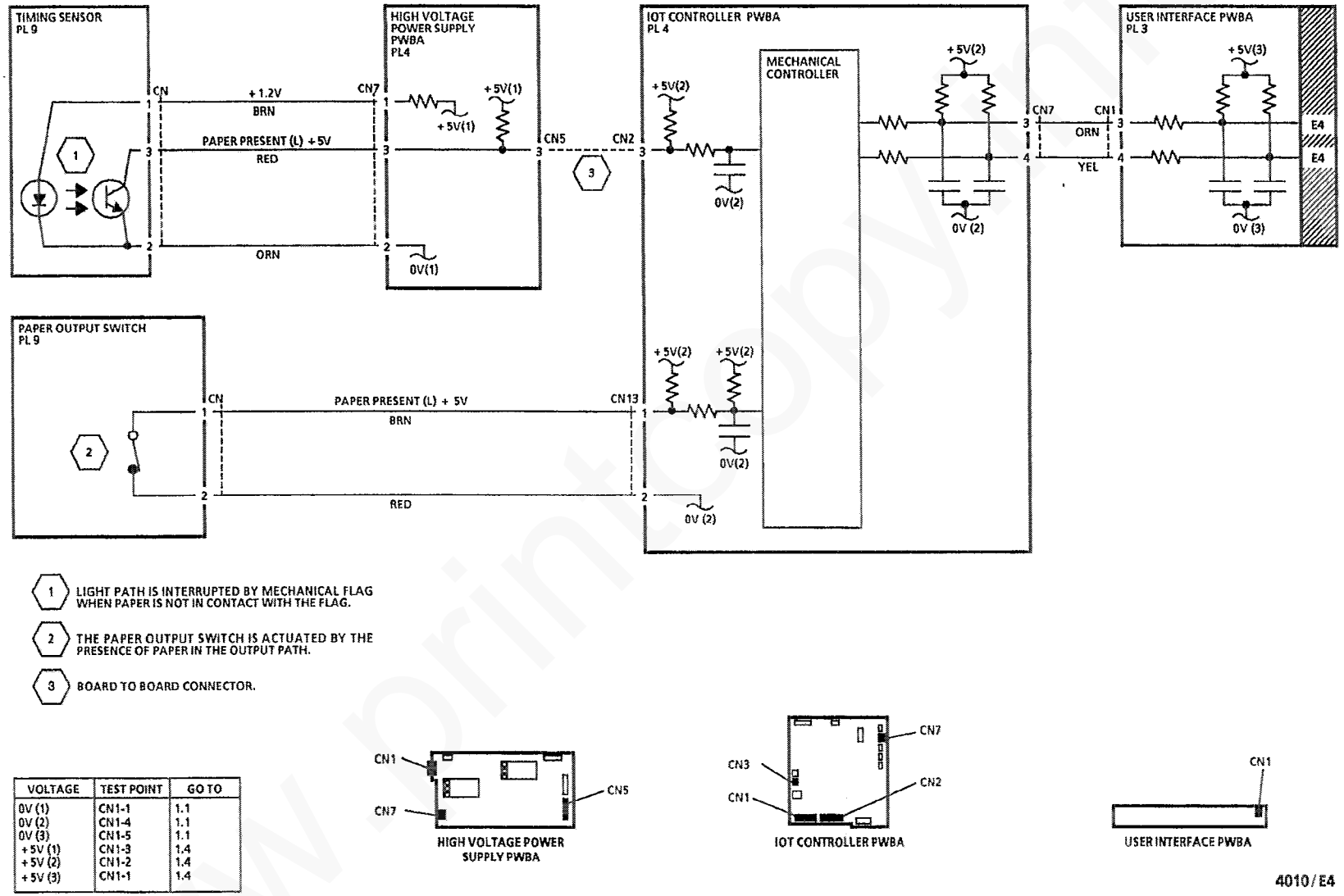


Figure 3. Component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-1	1.1
0V (2)	CN1-4	1.1
0V (3)	CN1-5	1.1
+5V (1)	CN1-3	1.4
+5V (2)	CN1-2	1.4
+5V (3)	CN1-1	1.4

Figure 4. E4 circuit diagram

E5 COVER OPEN

Fault code E5 COVER OPEN indicates the control logic has detected that the interlock switch located on the power supply PWBA has not been actuated.

Procedure

Turn the machine off at the on/off switch.

Remove tray 2, if fitted (REP 7.5 in Section 8).

(Figure 3) Position the machine so that the tray 2 connector on the IOT controller PWBA is over the edge of the desk. Connect the 7 way IOT test connector 600T91615 to CN 3 on the IOT controller PWBA.

Turn the machine on at the on/off switch. **+24V is available between the blue and brown wires at the end of the test connector (Figure 3) when the top cover is closed, and is not available when the cover is open.**

Y N

Perform the following actions:

- Go to RAP 1.3 and check the +24V generation and distribution.
- Check all of the mechanical components that actuate the interlock switch, for wear or damage, make repairs where necessary. Install a new interlock switch actuator REP 1.2 if necessary. If the switch actuating mechanism is working correctly, install a new high voltage power suppply PWBA REP 9.4.

Install a new IOT controller PWBA REP 3.1. Perform the J6 Service Required RAP.

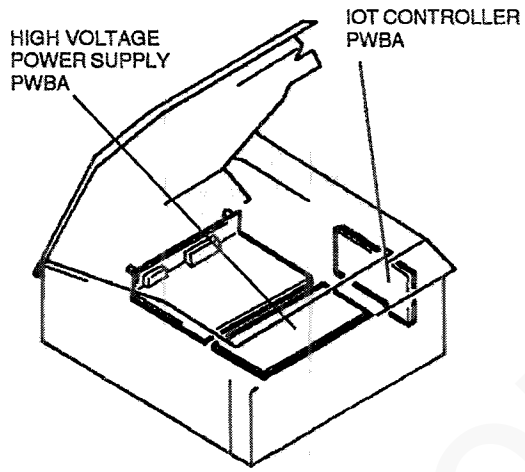


Figure 1. Component location

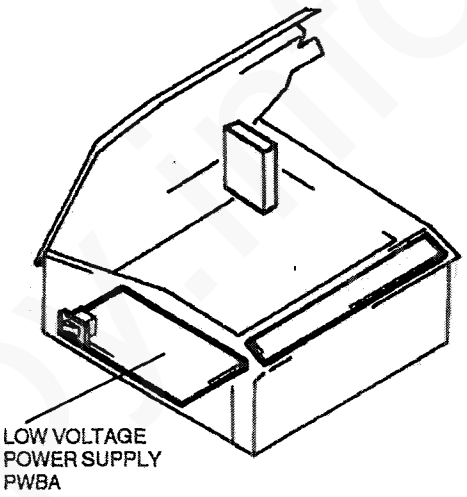


Figure 2. Component location

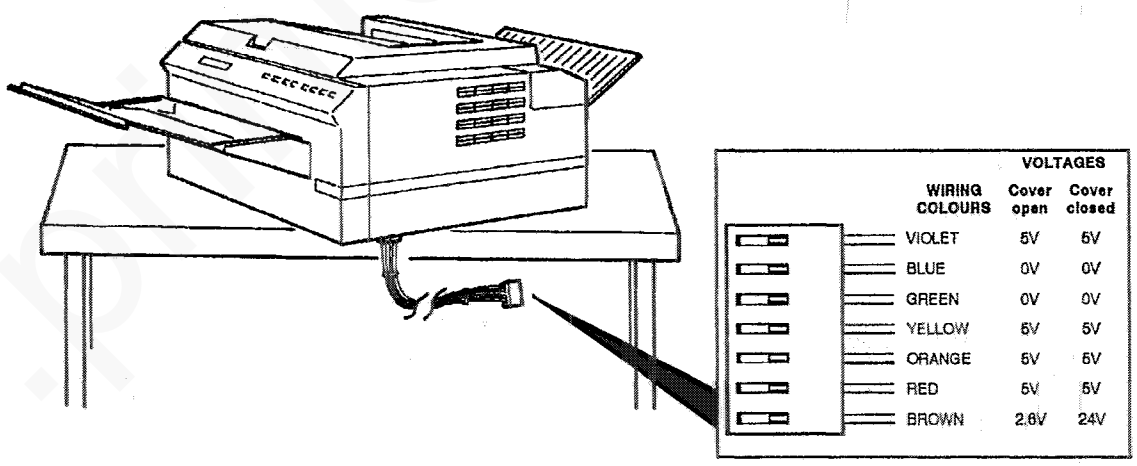
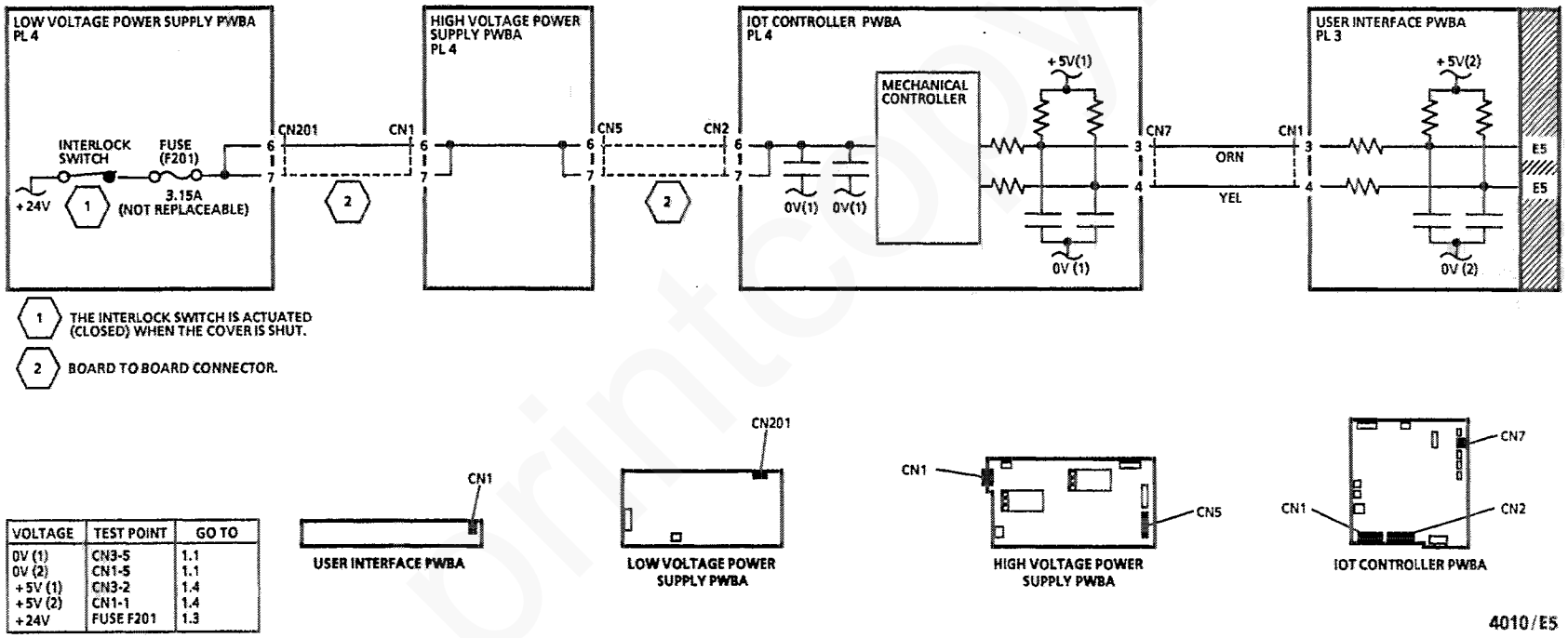


Figure 3. Test connector



VOLTAGE	TEST POINT	GO TO
0V (1)	CN3-5	1.1
0V (2)	CN1-5	1.1
+5V (1)	CN3-2	1.4
+5V (2)	CN1-1	1.4
+24V	FUSE F201	1.3

Figure 4. E5 circuit diagram

FC CARTRIDGE REMOVED

Code FC CARTRIDGE REMOVED indicates the control logic has detected that the font cartridge was removed while the machine was off-line, but the data in the print buffer needed to access data in the font cartridge. When the font cartridge is replaced the machine will continue.

CAUTION

Forcing a cartridge into the port the wrong way round, ie. 180 degrees twist from the locating key, can cause mechanical and electrical damage.

Procedure.

Examine the connectors of the font cartridge and the ESS controller PWBA for cantamination or damaged pins, clean and repair the parts if necessary.

Make a print that will use the font cartridge. **The message FC CARTRIDGE REMOVED is displayed.**

Y N

| Perform the System Checkout in section 1.

Install a new font cartridge. Make a print that will use the font cartridge. **The message FC CARTRIDGE REMOVED is displayed.**

Y N

| Perform the System Checkout in section 1.

Install a new ESS controller PWBA REP 3.3. Perform the System Checkout in section 1.

FE CARTRIDGE POWER OFF & ON

Code FE CARTRIDGE POWER OFF & ON indicates the control logic has detected that the font cartridge was removed while the machine was on-line, Turn the machine off and on to recover from the error.

CAUTION

Forcing a cartridge into the port the wrong way round, ie. 180 degrees twist from the locating key, can cause mechanical and electrical damage.

Procedure.

Examine the connectors of the print cartridge and the ESS controller PWBA for cantamination or damaged pins, clean and repair the parts if necessary.

Make a print that will use the font cartridge. **The message is FE CARTRIDGE POWER OFF & ON displayed.**

Y N

| Perform the System Checkout in section 1.

Install a new font cartridge. Make a print that will use the font cartridge. **The message FE CARTRIDGE POWER OFF & ON is displayed.**

Y N

| Perform the System Checkout in section 1.

Install a new ESS controller PWBA REP 3.3. Perform the System Checkout in section 1.

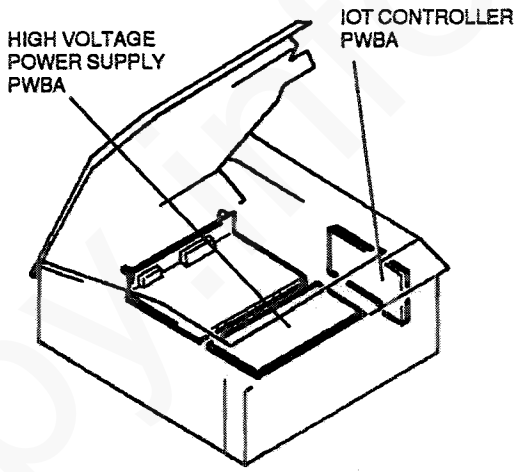


Figure 1. Component location

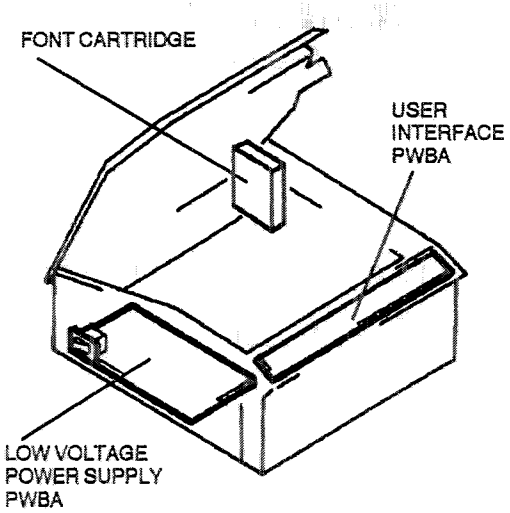
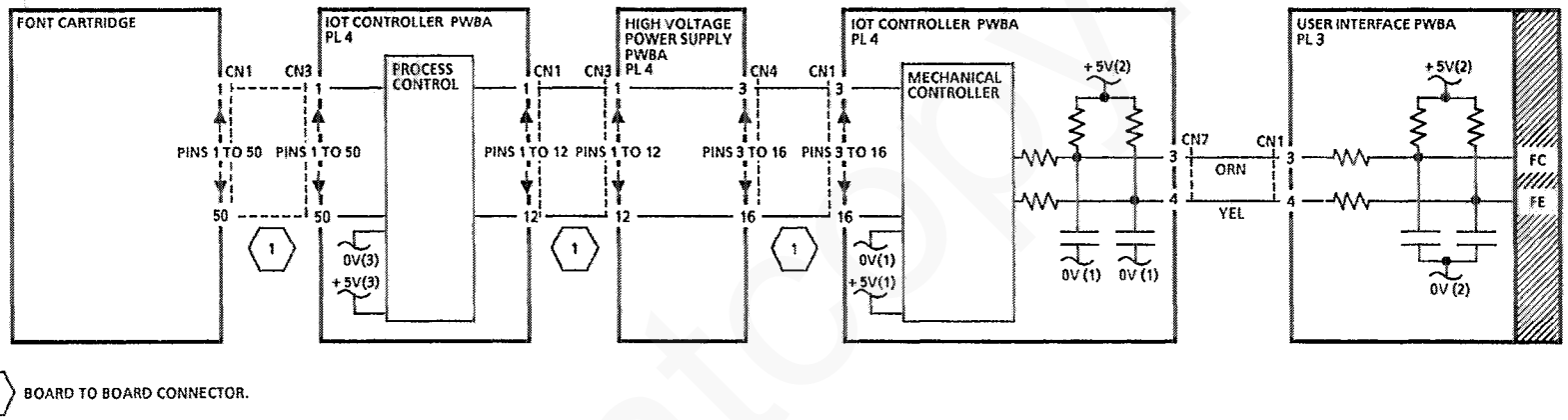
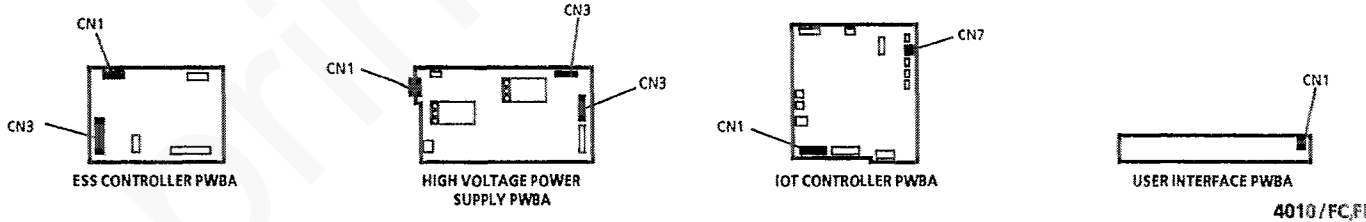


Figure 2. Component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-4	1.1
0V (2)	CN1-5	1.1
0V (3)	CN1-6	1.1
+ 5V (1)	CN1-2	1.4
+ 5V (2)	CN1-1	1.4
+ 5V (3)	CN1-3	1.4



4010/FC,FE

Figure 3. FC, FE circuit diagram

J1 INSTALL PRINT COUNTER

Fault code J1 INSTALL PRINT COUNTER indicates the control logic has detected that the print counter is not connected

Procedure

Remove the print counter. Check that the connection pins are clean and undamaged, if necessary clean and/or repair the connection pins. Re-install the print counter. **The fault code J1 INSTALL PRINT COUNTER is displayed.**

Y N

| Perform the System Checkout in Section 1.

Install a new print counter and print cartridge (PL 1). **The fault code J1 INSTALL PRINT COUNTER is displayed.**

Y N

| Perform the System Checkout in Section 1.

Install a new IOT controller PWBA REP 3.1. Perform the J6 Service Required RAP.

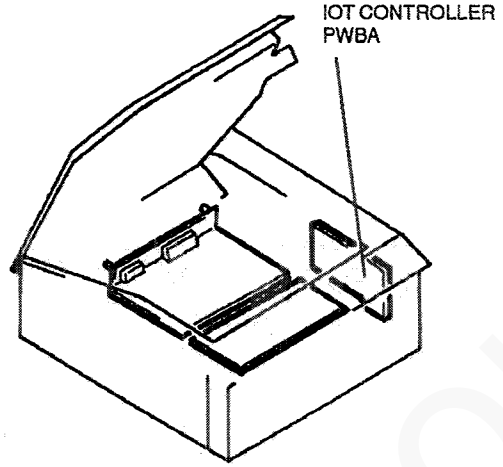


Figure 1. Component location

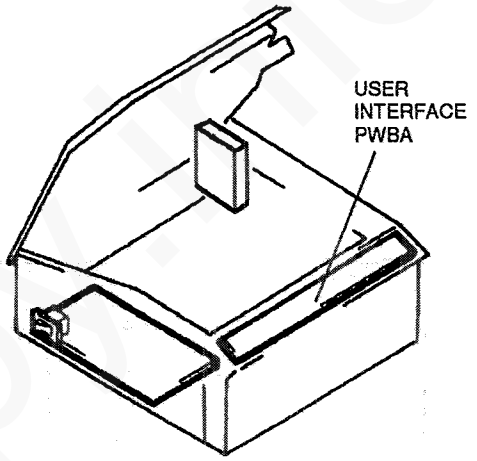
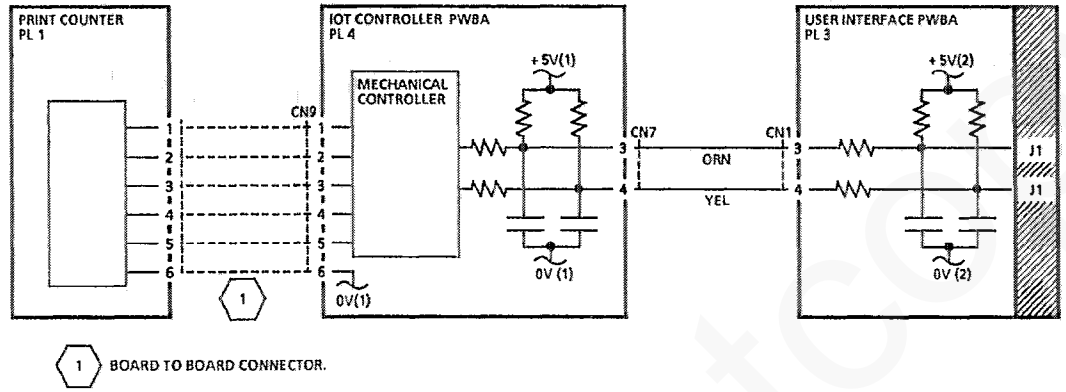
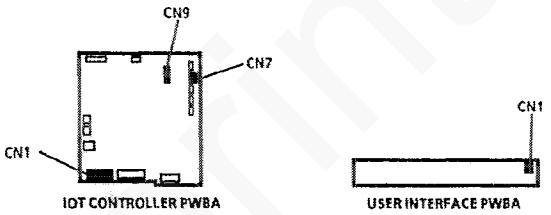


Figure 2. Component location





VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-4	1.1
0V (2)	CN1-5	1.1
+5V (1)	CN1-2	1.4
+5V (2)	CN1-1	1.4

4010/J1

Figure 3. J1 circuit diagram

J2 INSTALL PRINT CARTRIDGE

Fault code J2 INSTALL PRINT CARTRIDGE indicates the control logic has detected that the drive current to the erase lamps is too high or to low.

Initial actions

Clean the two square contact pads on the top of the print cartridge and the corresponding contacts underneath the laser scanner unit.

Procedure

Close the top cover. **Fault code J2 INSTALL PRINT CARTRIDGE is displayed.**

Y N

Perform the System Checkout in Section 1.

Connect a meter between the two contacts underneath the laser scanner unit and depress the interlock actuator using the interlock cheater. **+24V is available for approximately two seconds when the interlock is depressed.**

Y N

- Remove the laser scanner unit harness REP 6.2.
- Re-install all covers except the right side cover.
- Re-install the print cartridge and developer units.
- Position a lightproof bag on top of the machine so that it hangs over the right side of the machine to prevent light entering the print cartridge (the right side cover makes a suitable weight to hold the bag in position).
- Select the face up tray as the output choice.

There is continuity between CN11 and CN1 for each wire of the laser scanner harness

Y N

Install a new ROS assembly harness REP 6.2. Perform the System Checkout in Section 1.

Re-connect the ROS assembly harness at CN1 on the IOT controller PWBA, turn the machine on at the On/Off Switch. **+24V is available on pin 11 at the free end of the ROS assembly harness.**

Y N

Go to RAP 1.3 and check the +24V supply to the IOT controller PWBA.

0V is available on pin 12 at the free end of the ROS assembly harness.

Y N

Go to RAP 1.1 and check the 0V supply to the IOT controller PWBA

A B

A B

Check that the two screws securing the red and green wire terminals to the sprung terminals of the ROS assembly are tight. Re-install the ROS assembly and the ROS assemby harness, Connect a meter between the two contacts underneath the ROS assembly and depress the interlock actuator using the interlock cheater. **+24V is available for approximately two seconds when the interlock is depressed.**

Y N

Install a new ROS assembly REP 6.1. Perform the System Checkout in Section 1.

Perform the System Checkout in Section 1.

It is possible that the sprung contacts on the bottom of the ROS assembly have become deformed. Carefully reform the contacts using a pair of fine nosed pliers so that they contact the print cartridge with more force when the top cover is closed. If this does not cure the fault, install a new print cartridge (PL 1). Perform the System Checkout in Section 1.

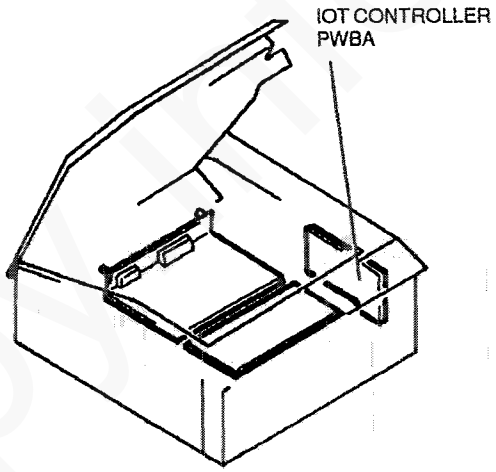


Figure 1. Component location

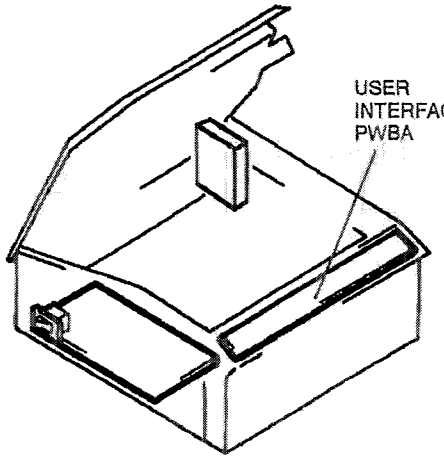
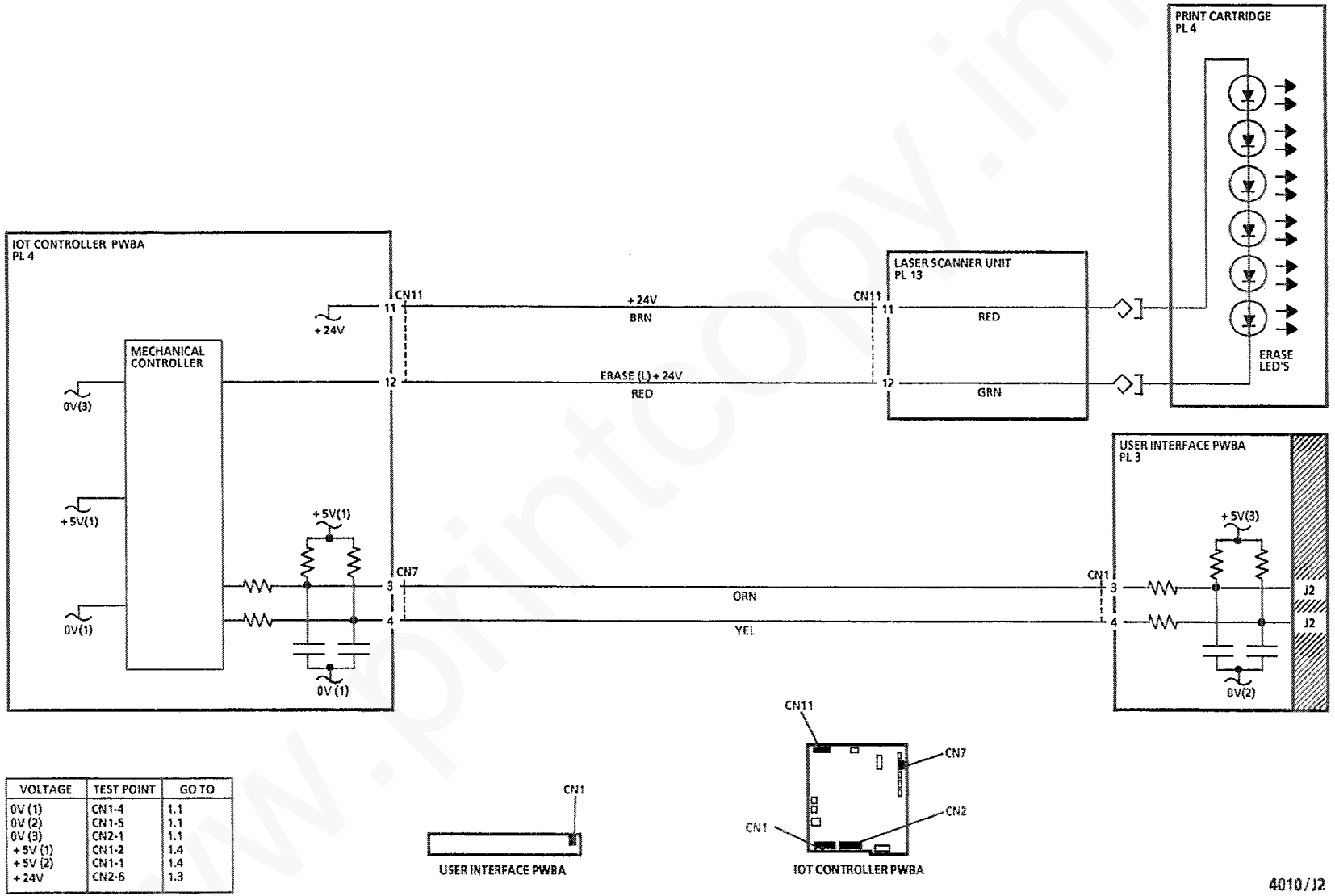


Figure 2. Component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-4	1.1
0V (2)	CN1-5	1.1
0V (3)	CN2-1	1.1
+5V (1)	CN1-2	1.4
+5V (2)	CN1-1	1.4
+24V	CN2-6	1.3

Figure 3. J2 circuit diagram

J4 REPLACE PRINT CARTRIDGE

Fault code J4 REPLACE PRINT CARTRIDGE indicates the control logic has decided that the print cartridge has reached the end of its service life (10,000 prints).

Procedure

The machine has made approximately 10,000 prints since the Print Cartridge was installed.

Y **N**

Perform the following actions in the order given:

- Install a new print cartridge and print counter (PL 1).
- Install a new IOT controller PWBA REP 3.1.
- Install a new user interface REP 2.2.
- Perform the System Checkout in Section 1.

Install a new print cartridge and print counter (PL 1). Perform the System Checkout in Section 1.

J5 REPLACE TONER CARTRIDGE

Fault code J5 REPLACE TONER CARTRIDGE indicates the control logic has detected that the drive current to the toner motor is too high or too low, or that a low level of toner is still being detected after 5 prints have been made following the occurence of a J7 TONER LOW fault code

Initial Actions

Remove the developer unit and print cartridge from the machine, place the print cartridge in a lightproof bag.

Clean the five contacts on the front of the developer unit and the corresponding contacts of the machine cavity (Figure 4).

Gently shake the developer unit from side to side to ensure that the toner is evenly distributed.

Reinstall the toner cartridge and print cartridge.

Procedure

Turn the machine on. **J5 REPLACE TONER CARTRIDGE is displayed after a few seconds.**

Y N

Make 5 prints. The message **J5 REPLACE TONER CARTRIDGE is displayed after 5 prints have been made**

Y N

Perform the System Checkout in Section 1.

Replenish the toner hopper by installing a new toner cartridge.

Remove the toner cartridge and print cartridge from the machine, place the print cartride in a lightproof bag.

(Figure 4) Connect a meter between contact A and contact B of the machine cavity, turn the machine on at the on/off switch and depress the interlock actuator using an interlock cheater. **+24V is available for a few seconds.**

Y N

Remove the front cover (REP 14.5). Disconnect CN6 on the IOT controller PWBA. **There is continuity between contact A and the red wire at CN6 and between contact B and the brown wire at CN6.**

Y N

Install a new developer unit terminal assembly (REP 9.5). Perform the System Checkout in Section 1.

- Go to RAP 1.3 and check the +24V supply to the IOT controller PWBA.
- Go to RAP 1.1 and check the 0V supply to the IOT controller PWBA

Install a new toner motor assembly (REP 9.7). Perform the System Checkout in Section 1.

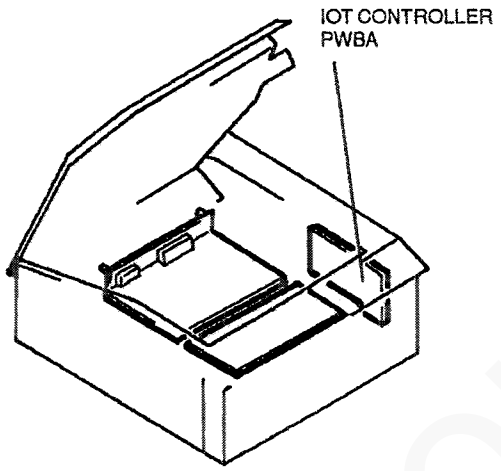


Figure 1. Component location

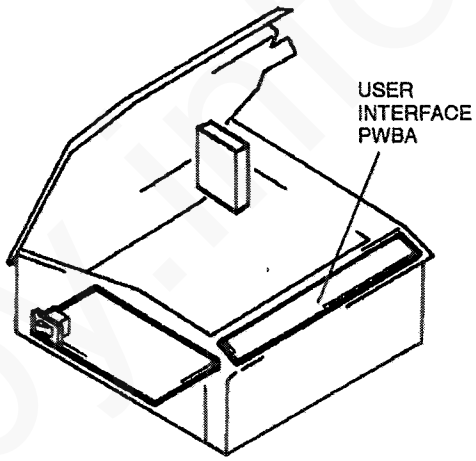


Figure 2. Component location

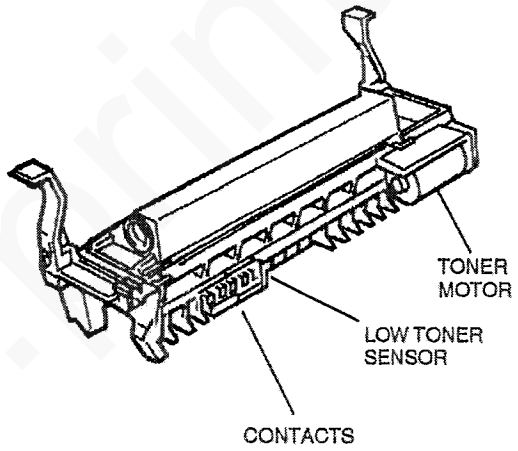


Figure 3. Component location

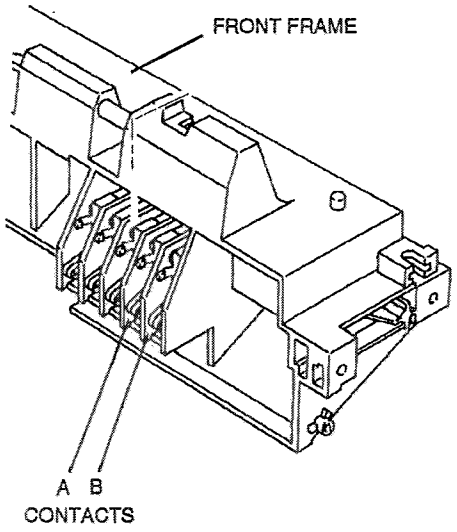
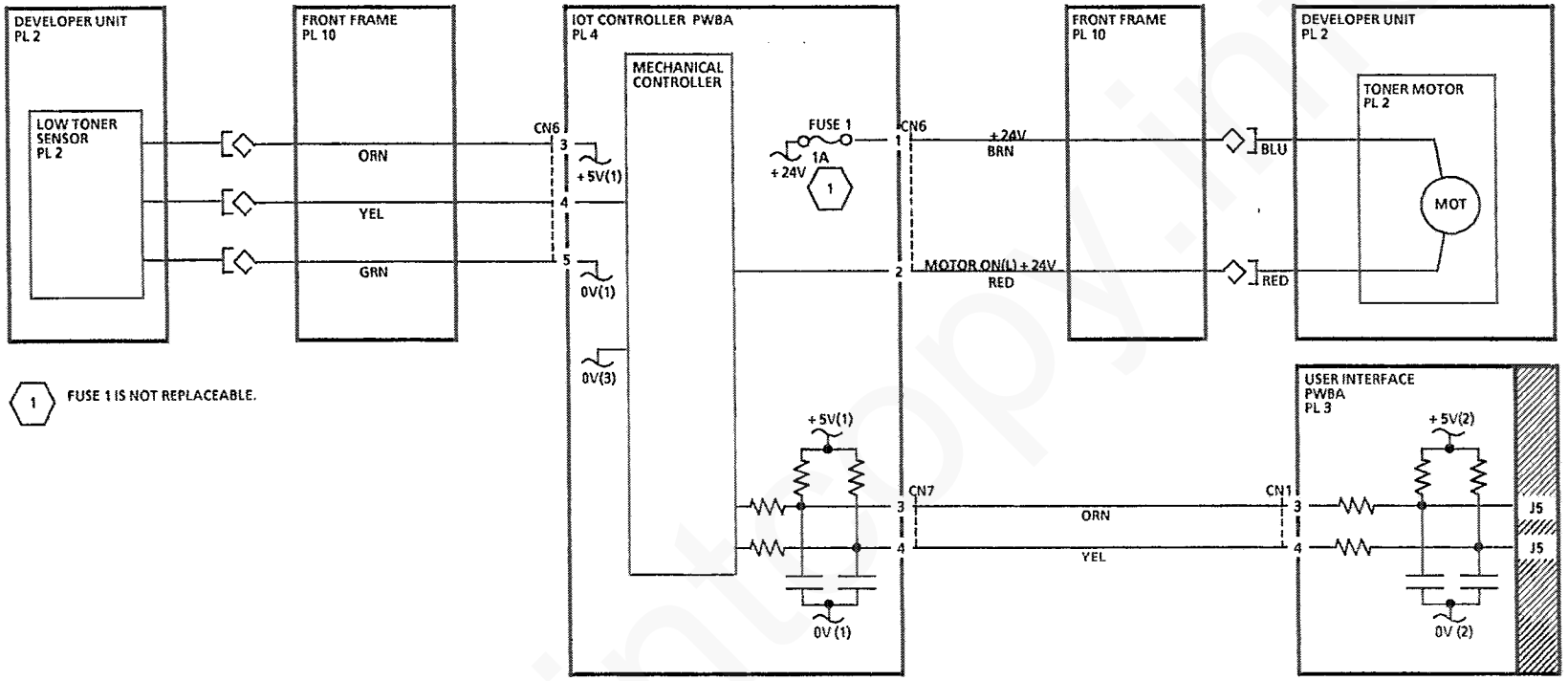
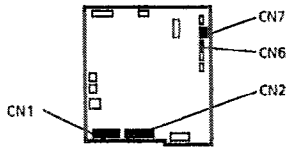


Figure 4. Developer contacts



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-4	1.1
0V (2)	CN1-5	1.1
0V (3)	CN2-1	1.1
+5V (1)	CN1-2	1.4
+5V (2)	CN1-1	1.4
+24V	CN2-6	1.3



IOT CONTROLLER PWBA

USER INTERFACE PWBA

4010/J5

Figure 4. J5 circuit diagram

J6 SERVICE REQUIRED

Fault code J6 SERVICE REQUIRED indicates that the control logic has decided that 80,000 prints have been made since the last full service.

Procedure

Install new components as listed below:

Part name	Parts list reference	Repair procedure reference
Fuser assembly	PL 9	REP 10.1
Friction pad	PL 9	REP 7.1
Corotron assembly	PL 9	REP 9.1
Developer assembly	PL 1	-
Print cartridge	PL 1	-
Cassette feed roller unit	PL 10	REP 7.3
Ozone filter	PL 8	REP 4.4

Perform the Reset Message Status procedure GP 10.

Perform the System Checkout in Section 1.

J7 TONER LOW

Fault code J7 TONER LOW indicates the control logic has detected a low level of toner in the developer unit.

Note: If toner becomes low when making test prints, no error code is displayed, the display is blank and the machine will not function. Turn off and on to reset the machine.

Procedure

Remove the toner hopper cover. **The toner level is low but evenly distributed.**

Y N

Turn the machine on at the On/Off switch and depress the Interlock Actuator using the Interlock Cheater.**The toner hopper paddle rotates.**

Y N

Install a new developer unit (PL 1).Perform the System Checkout in Section 1.

Check to see if the machine is sitting level. Re-site the machine to achieve a level attitude if necessary.

Replenish the toner hopper by installing a new toner cartridge.

U2 ROS FAILURE

Fault code U2 ROS FAILURE indicates the control logic has detected that the drive current to the polygon motor in the ROS assembly is too high or too low.

Initial actions

Disconnect the harness from the laser scanner unit.

Procedure

Remove the print cartridge and examine the surface of the photreceptor. **There is a toner image on the surface of the photoreceptor.**

Y N

Turn the machine on at the on/off switch. Make a check for the following voltages at CN11 on the free end of the laser scanner unit harness:

Pin 1	+5V
Pin 2	0V
Pin 3	0V
Pin 4	+24
Pin 5	+8.9V
Pin 6	0V
Pin 7	+5V
Pin 8	+3.8V
Pin 9	+8.9V
Pin 10	0V
Pin 11	+24V
Pin 12	0V

All of the voltages are correct

Y N

- If any of the voltages are missing, remove the laser scanner unit harness REP 6.2 and check for continuity between the ends of the suspected wires. If the wires are damaged, install a new laser scanner unit harness.
- Refer to the circuit diagram and check the 0V, +5V and +24v supplies to the IOT controller PWBA. If all of the supplies are good, install a new IOT controller PWBA REP 3.3. Perform the J6 Service Required RAP.

Install a new laser scanner unit REP 6.1.

Install a new IOT controller PWBA REP 3.3. Perform the J6 Service Required RAP.

U2 RAP

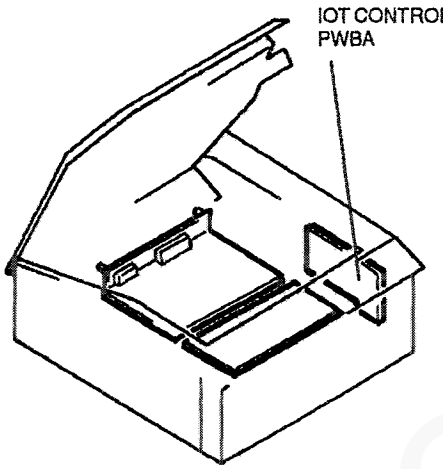


Figure 1. Component location

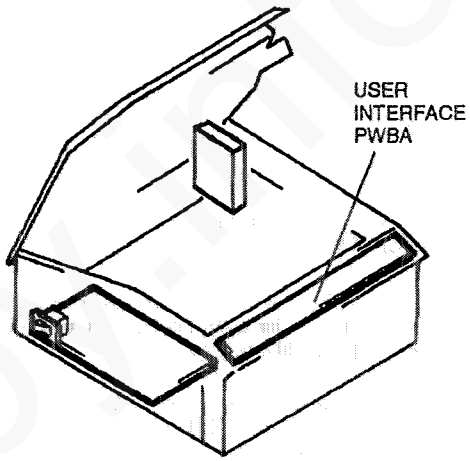
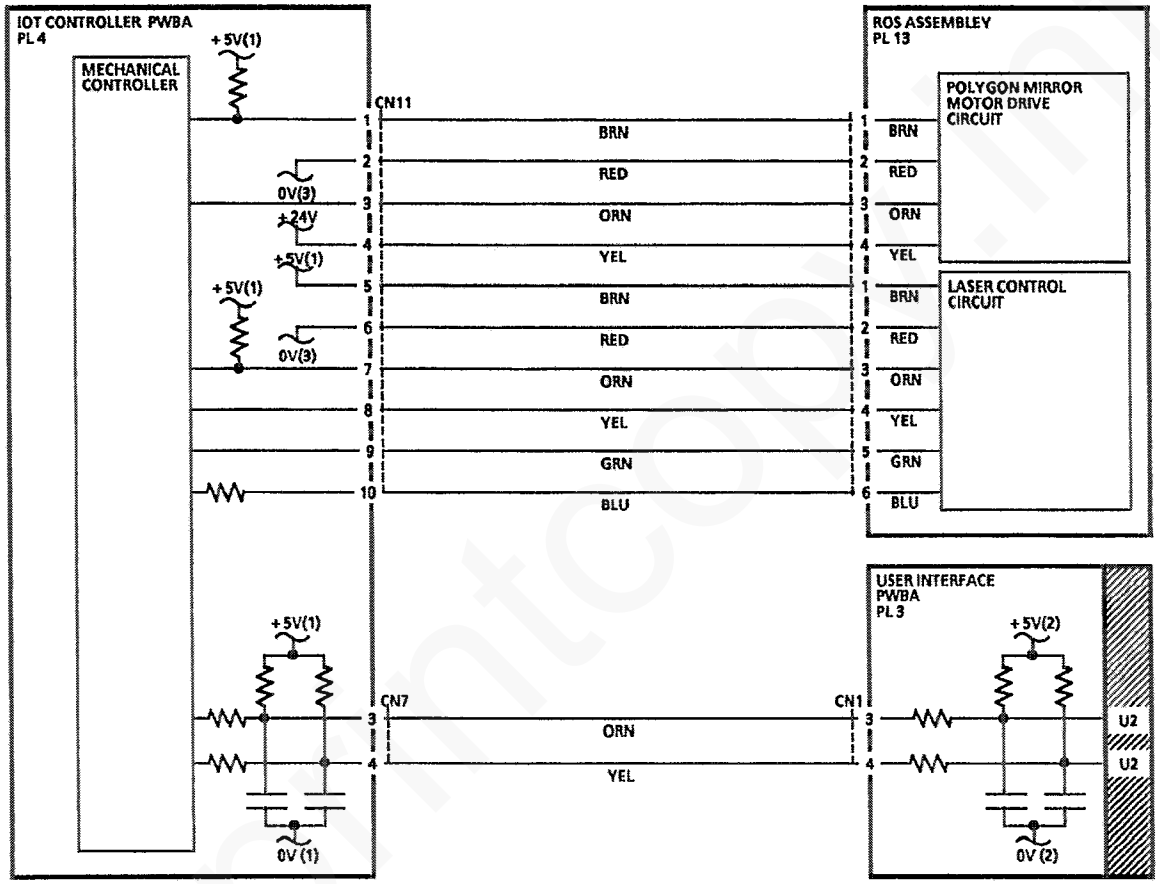
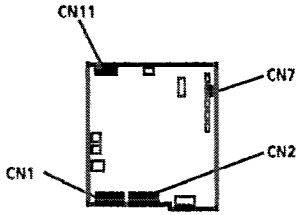


Figure 2. Component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-1	1.1
0V (2)	CN1-5	1.1
0V (3)	CN2-1	1.1
+5V (1)	CN1-2	1.4
+5V (2)	CN1-1	1.4
+24V	CN2-6	1.3



4010/U2

Figure 3. U2 circuit diagram

U3 IOT FAILURE

The fault code U3 IOT FAILURE indicates the control logic has detected a fault in the operation of the IOT controller PWBA.

Procedure

Make a check for continuity on all wires in the harness that connects between CN7 on the IOT controller PWBA and CN1 on the user interface PWBA. The harness is good

Y N

| Install a new harness PL 3.

Refer to the circuit diagram and check the 0V and +5V supplies to the IOT controller PWBA and the user interface PWBA.If the supplies are good install a new IOT controller PWBA (PL 4). Perform the J6 Service Required RAP.

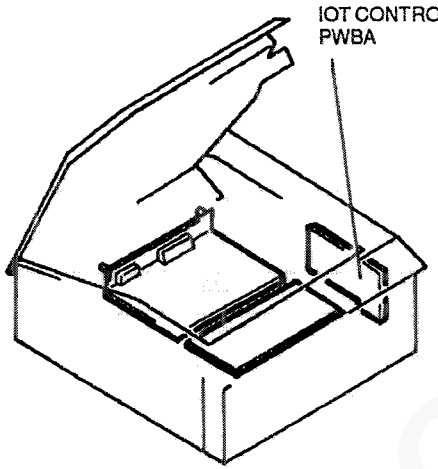


Figure 1. Component location

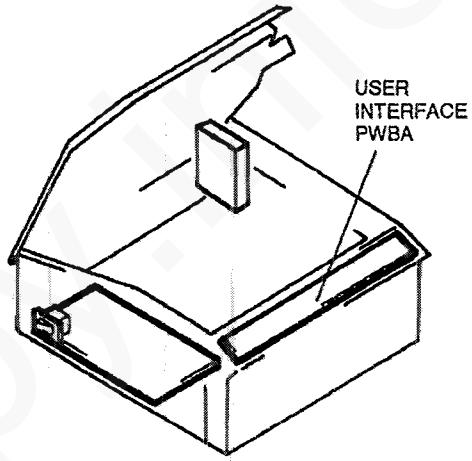
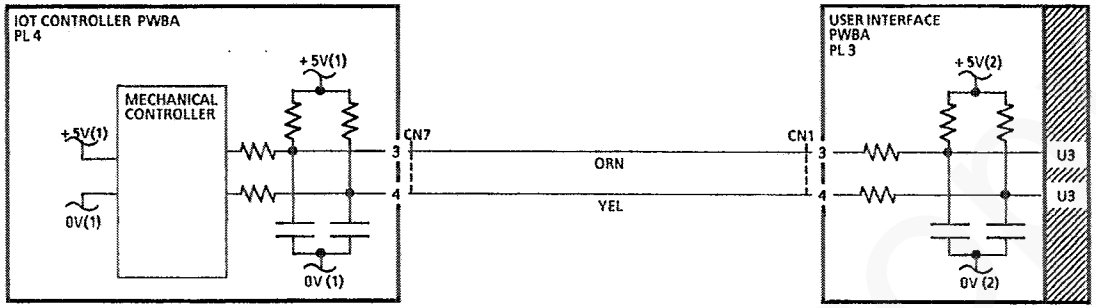
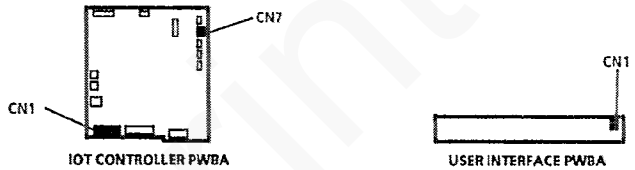


Figure 2. Component location





VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-4	1.1
0V (2)	CN1-5	1.1
+5V (1)	CN1-2	1.4
+5V (2)	CN1-1	1.4

4010/U3

Figure 3. U3 circuit diagram

U4 FUSER FAILURE

Fault code U4 FUSER FAILURE indicates the control logic has detected an error condition in the temperature sensing circuit of the fuser.

Initial actions

- Remove the Right Side Cover (REP 14.3).

Procedure

WARNING

The fuser assembly operates at temperatures of 160 to 180 degrees Celsius. Switch off the machine at the on/off switch and remove the power cord. Allow the machine to cool for at least 15 minutes before starting this procedure.

The fuser cleaning pad is impregnated with silicone oil. Avoid touching the surface of the cleaning pad. Do not allow silicone oil to come into contact with the eyes or sensitive parts of the body.

Disconnect CN12 on the IOT controller PWBA. **Between 10k and 20k ohms are available between the two wires leading to the fuser temperature sensor.**

Y N

Install a new fuser cover assembly (REP 10.3). Perform the System Checkout in Section 1.

Disconnect the fuser rod harness from CN102 on the low votage power supply PWBA. **The resistance measured between the two wires of the fuser rod harness is 10 ohms (± 2 ohms).**

Y N

Replace the fuser rod (REP 10.4). Perform the System Checkout in Section 1.

Refer to the circuit diagram and check the 0V and +5V supplies to the IOT controller PWBA. If the supplies are good, replace the following in the order given:

- Fuser assembly (REP 10.1).
- IOT controller PWBA (REP 3.1). Perform the J6 Service Required RAP.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

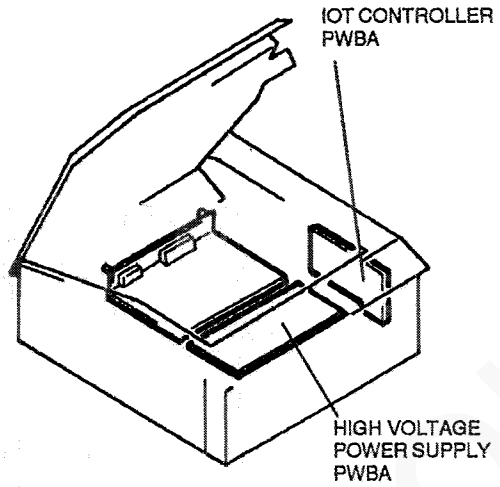


Figure 1. Component location

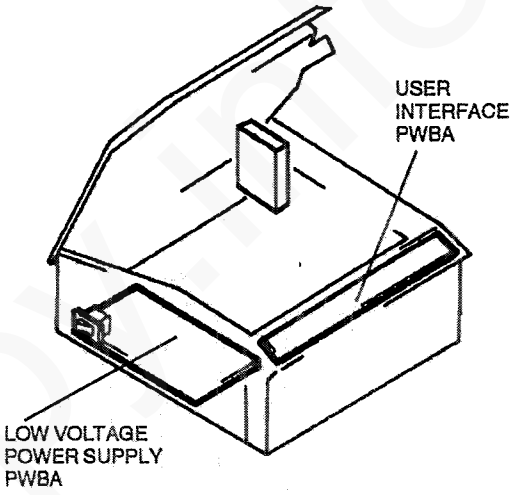
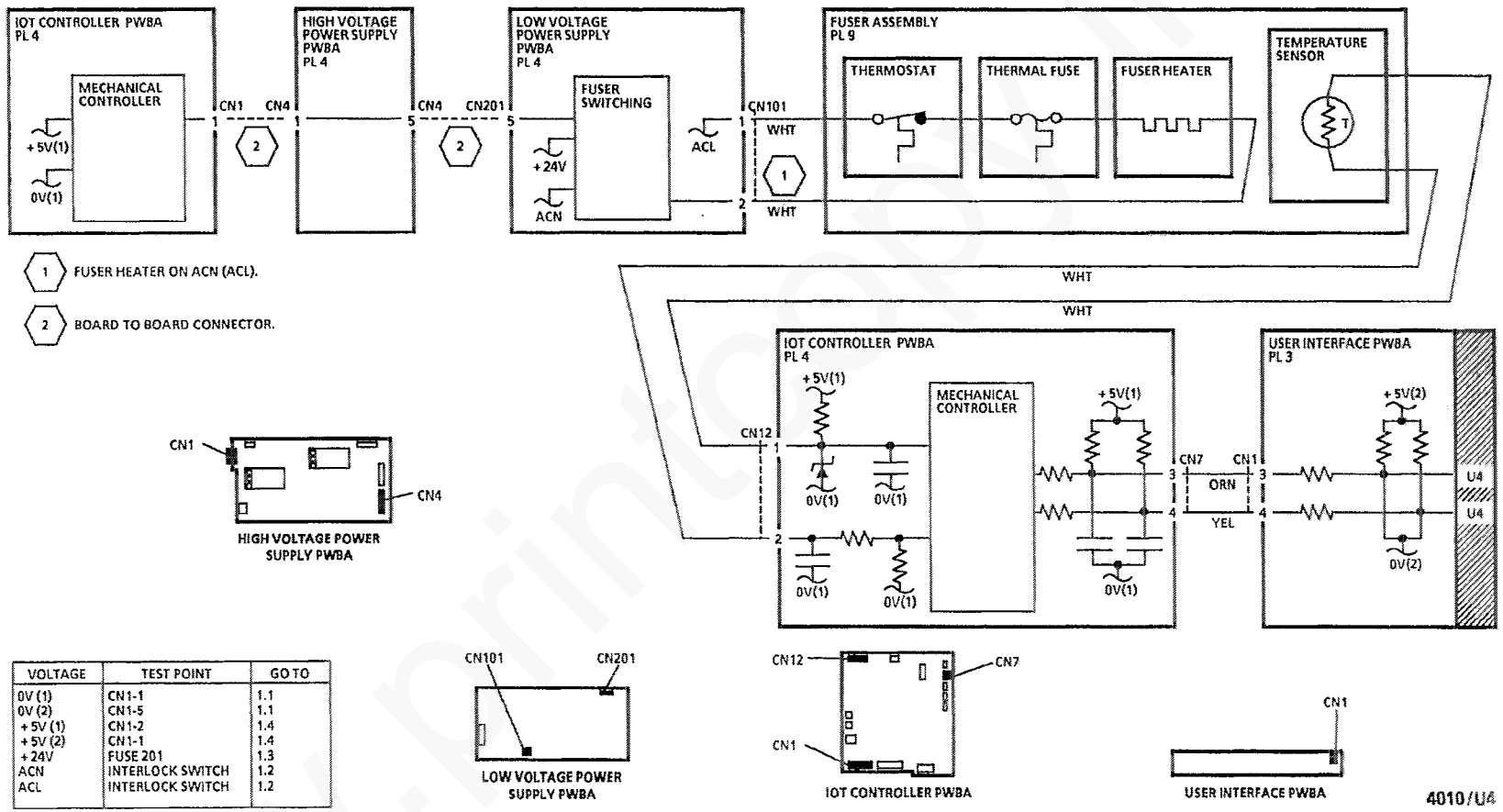


Figure 2. Component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-1	1.1
0V (2)	CN1-5	1.1
+5V (1)	CN1-2	1.4
+5V (2)	CN1-1	1.4
+24V	FUSE 201	1.3
ACN	INTERLOCK SWITCH	1.2
ACL	INTERLOCK SWITCH	1.2

Figure 3. U4 circuit diagram

U5 HT FAILURE

Fault code U5 HT FAILURE indicates the control logic has detected that the drive current to the high voltage power supply PWBA is too high or too low.

Initial actions

Remove the left high voltage connector assembly REP 9.2 and the right high voltage connector assembly REP 9.3. Thoroughly clean the contact surfaces of the connector assemblies and the corresponding contact points of the corotron assembly (PL 9), the developer unit (PL 1) and the print cartridge (PL 1). If any of the parts are damaged or worn, install new parts.

Procedure

Make some test prints. **U5 HT FAILURE is displayed.**

Y N

Perform the System Checkout in Section 1.

Turn the machine off at the on/off switch. Remove tray 2, if fitted. Position the machine so that the tray 2 connector on the IOT controller PWBA hangs over the side of the desk.Connect the 7 way IOT test connector 600T91815 to CN 3 on the IOT controller PWBA and turn the machine on at the on/off switch. **0V is available on the blue wire at the end of the test connector.**

Y N

Go to RAP 1.1 and check out the 0V supply to the high voltage power supply PWBA.

0V is available on the brown wire at the end of the test connector.

Y N

Go to RAP 1.3 and check out the +24V supply to the high voltage power supply PWBA.

Install a new high voltage power supply PWBA (PL 4). Perform the System Checkout in Section 1.

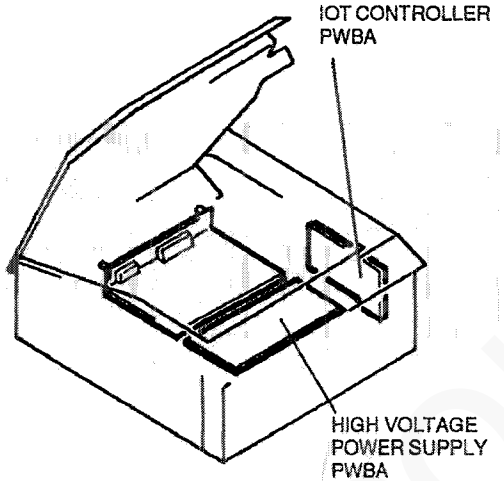


Figure 1. Component location

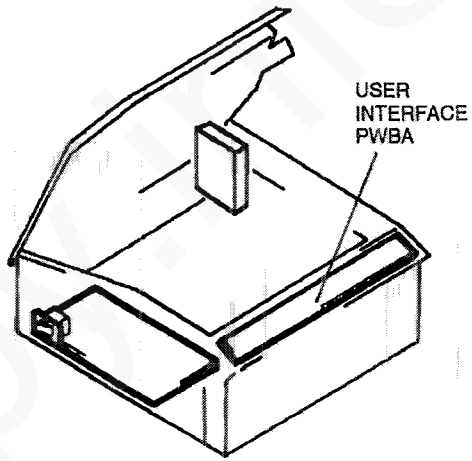
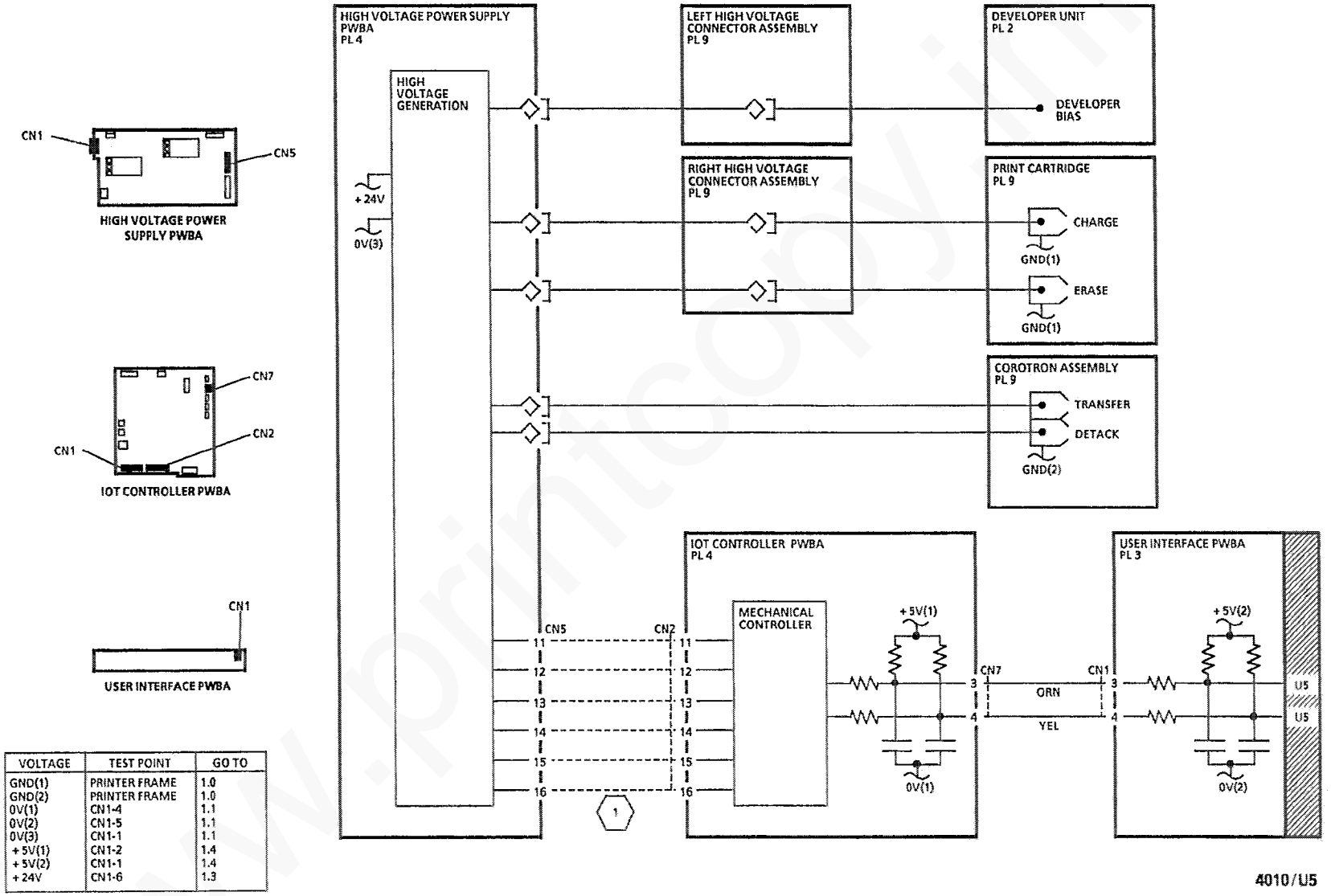


Figure 2. Component location



VOLTAGE	TEST POINT	GO TO
GND(1)	PRINTER FRAME	1.0
GND(2)	PRINTER FRAME	1.0
0V(1)	CN1-4	1.1
0V(2)	CN1-5	1.1
0V(3)	CN1-1	1.1
+5V(1)	CN1-2	1.4
+5V(2)	CN1-1	1.4
+24V	CN1-6	1.3

Figure 3. U5 circuit diagram

U6 FAN FAILURE SERVICE REQUIRED

Fault code U6 FAN FAILURE SERVICE REQUIRED indicates the control logic has detected that the drive current to the fan assembly is too high or too low.

Initial actions

- Remove the right side cover REP 14.3.
- Re-install all covers except the right side cover.
- Re-install the print cartridge and developer units.
- Position a lightproof bag on top of the machine so that it hangs over the right side of the machine to prevent light entering the print cartridge (the right side cover makes a suitable weight to hold the bag in position).
- Select the face up tray as the output choice.

WARNING

The ROS may be energised during this RAP. Avoid exposure to beam.

Procedure

Check that the fan assembly connector CN14 is fully seated on the IOT controller PWBA. Plug in the power cord and switch the machine on at the on/off switch. **The message "U6 FAN FAILURE SERVICE REQUIRED" is displayed.**

Y N

Allow sufficient time for the machine to warm up (60 seconds). **The display indicates that the machine is ready to print.**

Y N

Go to the RAP associated with the new message code.

Perform the System Checkout in Section 1.

Turn off the machine at the on/off switch. Disconnect CN14 on the IOT controller PWBA. **Between 2k and 5k ohms is available between the two wires leading to the fan assembly.**

Y N

Install a new fan assembly REP 4.2. Perform the System Checkout in Section 1.

Remove tray 2, if fitted. Position the machine so that the tray 2 connector on the IOT controller PWBA hangs over the side of the desk.Connect the 7 way IOT test connector 600T91815 to CN 3 on the IOT controller PWBA and turn the machine on at the on/off switch. **0V is available on the blue wire at the end of the test connector.**

Y N

Go to RAP 1.1 and check out the 0V supply to the high voltage power supply PWBA.

A

A

0V is available on the brown wire at the end of the test connector.

Y N

Go to RAP 1.3 and check out the +24V supply to the high voltage power supply PWBA.

— Inspect the area around the fan assembly for an obstruction that would stop the fan from rotating, such as a trapped wire or a broken or badly fitted filter. If no obstuction can be found install a new fan assembly REP 4.2. Perform the System Checkout in Section 1.

— Ensure that the fan blades rotate freely, if there is any exessive resistance to rotation install a new fan assembly REP 4.2. Perform the System Checkout in Section 1.

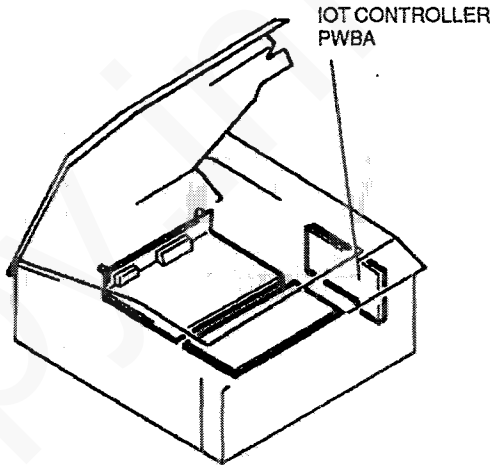


Figure 1. Component location

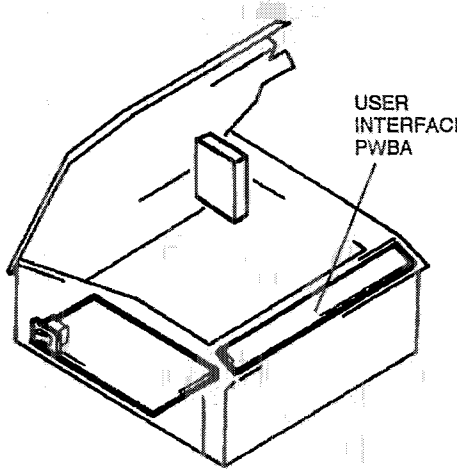
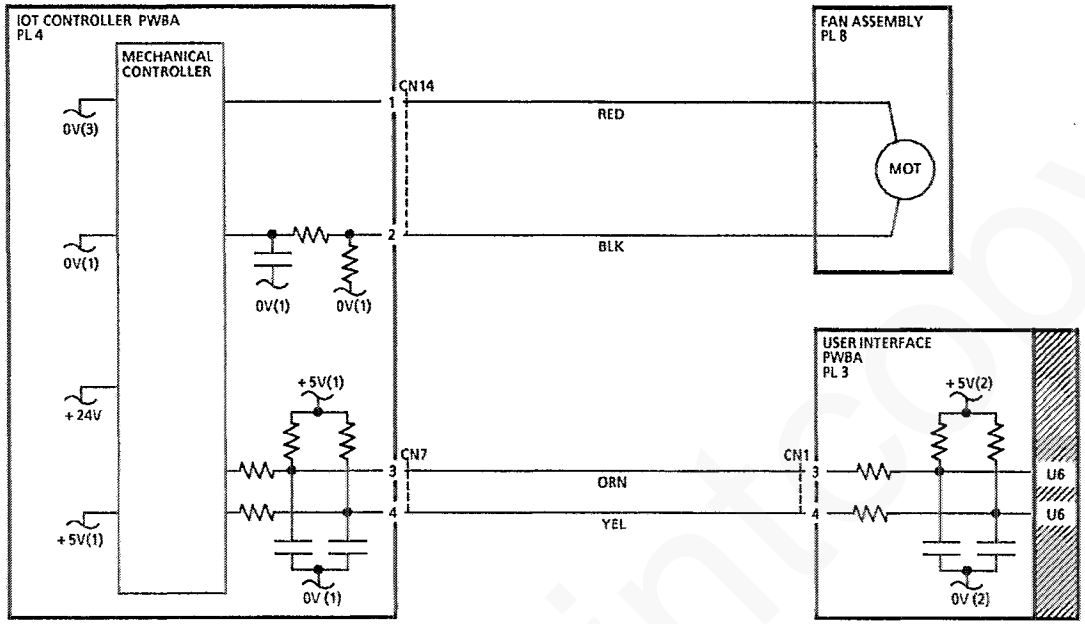
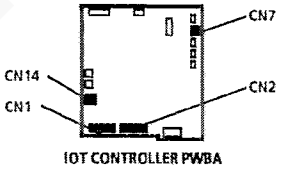


Figure 2. Component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-1	1.1
0V (2)	CN1-5	1.1
0V (3)	CN2-1	1.1
+5V (1)	CN1-2	1.4
+5V (2)	CN1-1	1.4
+24V	CN2-6	1.3



4010/U6

Figure 3. U6 circuit diagram

01 EPROM ERROR

Fault code 01 EPROM ERROR indicates the control logic has detected an error in the bank 1 eprom. No emulations will work.

Procedure

Install a new emulations EPROM REP 3.7. Perform the System Checkout in section 1.

02 EPROM ERROR

Fault code 02 EPROM ERROR indicates the control logic has detected an error in the bank 2 eprom. After pressing RESET the HP LaserJet emulations will work .

Procedure

Install a new emulations EPROM REP 3.7. Perform the System Checkout in section 1.

03 EPROM ERROR

Fault code 03 EPROM ERROR indicates the control logic has detected an error in the bank 3 eprom. After pressing RESET the HP LaserJet emulations will work .

Procedure

Install a new emulations EPROM REP 3.7. Perform the System Checkout in section 1.

04 EPROM ERROR

Fault code 04 EPROM ERROR indicates the control logic has detected an error in the bank 4 eprom. After pressing RESET the HP LaserJet emulations will work .

Procedure

Install a new emulations EPROM REP 3.7. Perform the System Checkout in section 1.

14 RESET

Fault Code 14 RESET indicates the control logic has detected a reset signal from the user interface control panel.

Procedure

Install a new user interface panel REP 2.2. Send 10 prints from the host computer. **The fault code 14 RESET is displayed.**

Y **N**

| Perform the System Checkout in section 1.

Install a new IOT controller PWBA REP 3.1. Perform the System Checkout in section 1.

15 CARTRIDGE CHECKSUM ERROR

Fault code 15 CARTRIDGE CHECKSUM ERROR indicates the control logic has detected a checksum error in the font or emulation cartridge. If the cartride is removed the machine will continue without the font or emulation features.

Procedure

Install a new font or emulation cartridge.

16 VERIFY OUTPUT PRESS RESET

Fault code 16 VERIFY OUTPUT PRESS RESET indicates the control logic has detected that a complex document has exeeded the capacity of the machine memory. It is possible that the controller may print a band buffer that is currently being built, an incomplete print may result.

Procedure

Inform the customer that more memory should be fitted to facilitate complex documents of this nature, or that the document should be simplified if possible.

17 UNKNOWN ERROR

Fault code 17 UNKNOWN ERROR indicates the control logic has detected an error of unknown origin.

Procedure

Check if software version 4.17 (TAG 50) is fitted.

Y N

This fault condition is caused by an unknown software condition or a momentary undervoltage or overvoltage condition of the customers AC electrical supply.

Inspect the power cord for wear or damage, if necessary install a new power cord (PL 1).

Inspect the customers AC electrical supply wall outlet for wear or damage. If necessary, re-site the machine or instruct the customer to have their AC electrical supply wall outlet repaired.

- Install Diagnostics cartridge.
- Press **DOWN** ▼ key to show "RAM TEST".
- Press **ENTER** ✳ key to run test. Test cycles from 52 to 58 and then repeats. If the test passes, the complete sequence starts again. If the test fails, the test will stop at either 52, 53, 54, 55, 56, 57 or 58 and reports the error.
- Continue with the reported error.

18 PAPER ERROR PRESS RESET

Code 18 PAPER ERROR PRESS RESET indicates the control logic has detected that the paper being used is not the same size as the data file requires.

Procedure

- Check the physical operation of the timing sensor, making sure that the actuating arm is free to move and that there is no foreign matter obstructing its operation.
- Inform the customer that paper of the correct size must be loaded in the paper tray.

40 to 47 SERIAL ERROR

Fault code 40 SERIAL ERROR to 47 SERIAL ERROR indicates the control logic has detected an error in the serial communications between the computer and the ESS controller PWBA. The individual numbers have the following meaning:

- 40 - general communication error.
- 41 - transmission failure.
- 42 - framing error.
- 43 - buffer overflow.
- 44 - transmit interrupt.
- 45 - parity check error.
- 46 - CTS/RTS failure.
- 47 - DSR/DTR failure.

Procedure

Go to GP9 Serial Loopback Test.

52 MEMORY ERROR

Fault code 52 MEMORY ERROR indicates the control logic has detected an error in a 1 Mbyte SIMM PWBA fitted in BANK 2 on the ESS controller PWBA.

Procedure

Remove the 1 Mbyte SIMM PWBA fitted in position 2 on the ESS controller PWBA REP 3.5. Move or swap the position of the SIMM to another position, reassemble the machine and turn on the machine. **The message 52 MEMORY ERROR is displayed.**

Y N

The message now refers the error to the position where the suspect SIMM was moved to. Install a new 1 Mbyte SIMM PWBA (REP 3.5). Perform the System Checkout in section 1.

Install a new ESS controller PWBA (REP 3.3). Perform the System Checkout in Section 1.

54 MEMORY ERROR

Fault code 54 MEMORY ERROR indicates the control logic has detected an error in a 1 Mbyte SIMM PWBA fitted in BANK 1 on the ESS controller PWBA.

Procedure

Remove the 1 Mbyte SIMM PWBA fitted in position 1 on the ESS controller PWBA REP 3.5. Move or swap the position of the SIMM to another position, reassemble the machine and turn on the machine. **The message 54 MEMORY ERROR is displayed.**

Y N

The message now refers the error to the position where the suspect Simm was moved to. Install a new 1 Mbyte SIMM PWBA (REP 3.5). Perform the System Checkout in section 1.

Install a new ESS controller PWBA (REP 3.3). Perform the System Checkout in Section 1.

56 MEMORY ERROR

Fault code 56 MEMORY ERROR indicates the control logic has detected an error in the internal RAM of the ESS controller PWBA.

Procedure

Install a new ESS controller PWBA (REP 3.5). Perform the System Checkout in Section 1.

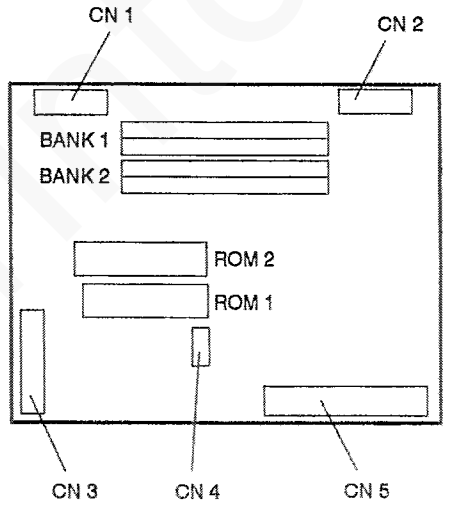


Figure 1. Component locator

58 CPU ERROR

Fault code 58 CPU ERROR indicates that the ESS controller PWBA has failed an internal memory test.

Procedure

Install a new ESS controller PWBA (REP 3.3). Perform the System Checkout in Section 1.

59 NVM ERROR

Fault code 59 NVM ERROR indicates the control logic has detected an error in the non volatile memory of the IOT controller PWBA.

Procedure

Install a new IOT controller PWBA REP 3.1. Perform the J6 Service Required RAP.

71 LOAD TRAY X WITH PAPER

Code 71 IOAD TRAY X WITH PAPER indicates the control logic has detected that the paper loaded in a tray does not match the paper size set in the function menu.

The parameters for the above message are as follows:
Tray 1: A4, A5, Letter or Legal.
Tray 2: A4 or Letter only.

Procedure

Check the size of the paper in both paper trays and compare with the settings in the function menu. **The paper sizes and settings are the same.**

Y N

Change the settings in the function menu or change the paper size in the paper trays.

- Check the physical operation of the timing sensor, making sure that the actuating arm is free to move and that there is no foreign matter abstructing its operation. If the sensor is damaged install a new timing sensor (REP 8.1). Perform the System Checkout in section 1.
- Install a new IOT controller PWBA (REP 3.1). Perform the J6 Service Required RAP.

72 LOAD TRAY 1 WITH ENVELOPE

Code 72 LOAD TRAY 1 WITH ENVELOPE indicates the control logic has detected that the paper loaded in tray 1 does not match the paper size set in the function menu.

The parameters for the above message are as follows:
C5, DL, COM-10, Monarch

Procedure

Check the size of the paper in tray 1 and compare with the settings in the function menu. **The paper sizes and settings are the same.**

Y N

Change the settings in the function menu or change the paper size in the paper tray.

- Check the physical operation of the timing sensor, making sure that the actuating arm is free to move and that there is no foreign matter abstructing its operation. If the sensor is damaged install a new timing sensor (REP 8.1). Perform the System Checkout in section 1.
- Install a new IOT controller PWBA REP (3.1). Perform the J6 Service Required RAP.

81 MANUALLY FEED PAPER

Code 81 MANUALLY FEED PAPER indicates the control logic has detected the manual feed option has been selected in the function menu.

The parameters for the above message are:
A4, A5, Letter or Legal.

Procedure

The manual feed option is selected in the funtion menu.

Y N

Install a new IOT controller PWBA REP 3.1. Perform the J6 Service Required RAP.

The machine is functioning normally

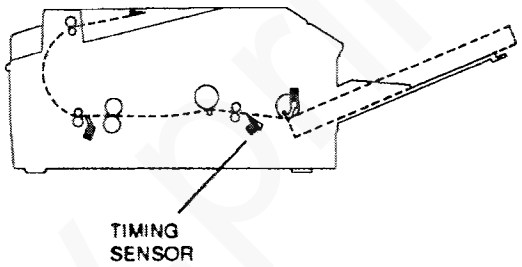


Figure 1. Component locator

82 MANUALLY FEED ENVELOPE

Code 82 MANUALLY FEED ENVELOPE indicates the control logic has detected the manual feed option has been selected in the function menu.

The parameters for the above message are:
C5, DL, COM-10, Monarch.

Procedure

The manual feed option is selected in the funtion menu.

Y **N**

Install a new IOT controller PWBA (REP 3.1). Perform the J6 Service Required RAP.

The machine is functioning normally

LACK OF MEMORY PRESS RESET

Fault code LACK OF MEMORY PRESS RESET indicates the control logic has detected that the document file has exeeded the capacity of the machine memory.

Procedure

Inform the customer that more memory should be fitted to facilitate large or complex documents, or that the document should be simplified if possible.

Notes

OF1 BLANK DISPLAY / PRINTER IS DEAD

Procedure

CAUTION

Check the Font/Emulation port for damage. If a cartridge has been forced in the wrong way round, ie. 180 degrees twist from locating key, electrical damage can result at power on.

Plug in the power cord and switch the machine on at the on/off switch. **The DRUM LIFE LED is illuminated.**

Y N

Refer to the circuit diagram and check the supplies to the IOT controller PWBA, if any supplies are missing or incorrect, go to the relevent voltage supply RAP.

The fan is running.

Y N

Go to the U6 Fan Failure Service Required RAP.

Allow sufficient time for the machine to warm up (60 seconds). **There is a readable message on the user interface display.**

Y N

It is possible that the printer is still functioning, although the display is blank. Produce a status sheet (GP2).

A status sheet is produced.

Y N

Perform the following actions in the order given:

- Remove the ESS controller PWBA (REP 3.3) and check that the notch on ROM 1 is lined up with the corresponding mark on the PWBA; there should be two spare connectors on the IC socket, at the notch end of ROM 1.
- Reinstall the ESS controller PWBA and ensure that the CN 1 and CN 2 on the ESS PWBA are connecting properly in the printer.
- Remove the user interface from the printer and remove the cover from the user interface (REP 14.8). Make a check for the following voltages at CN1 on the user interface PWBA:
  - Pin 1 (brown) +5V
  - Pin 2 (red) +5V
  - Pin 3 (orange) +3.7V
  - Pin 4 (yellow) +4.2V
  - Pin 5 (green) 0V

All of the voltages are correct.

Y N

Disconnect the user interface harness from CN1 on the user interface PWBA. Make a check for the following voltages at the free end of the user interface harness:

- Pin 1 (brown) +5V
- Pin 2 (red) +5V
- Pin 3 (orange) +5V
- Pin 4 (yellow) +5V
- Pin 5 (green) 0V

All of the voltages are correct.

Y N

Replace the following parts in the order given:

- User interface harness (REP 2.1)
- IOT controller PWBA (REP 3.1)
- ESS controller PWBA (REP 3.3).

Replace the following parts in the order given:

- User interface (REP 2.2)
- IOT Controller PWBA (REP 3.1)
- ESS controller PWBA (REP 3.3).

Replace the following parts in the order given:

- User interface (REP 2.2).
- IOT controller PWBA (REP 3.1)
- ESS controller PWBA (REP 3.3).

Replace the following parts in the order given:

- User interface (REP 2.2)
- IOT controller PWBA (REP 3.1)
- ESS controller PWBA (REP 3.3).

The message indicates that the machine is ready to print.

Y N

Go to the appropriate RAP for the message displayed.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

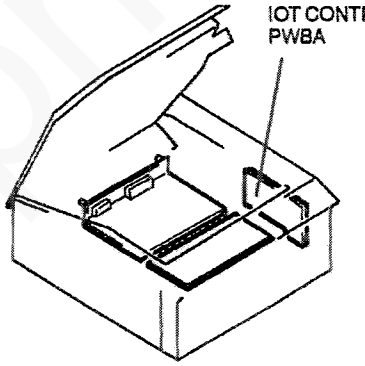


Figure 1. Component location

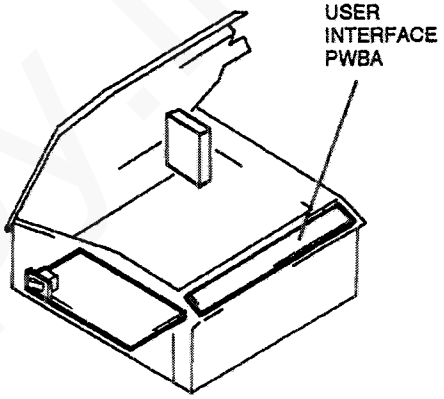


Figure 2. Component location

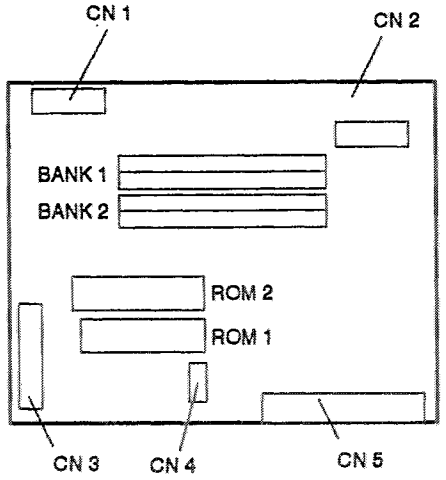
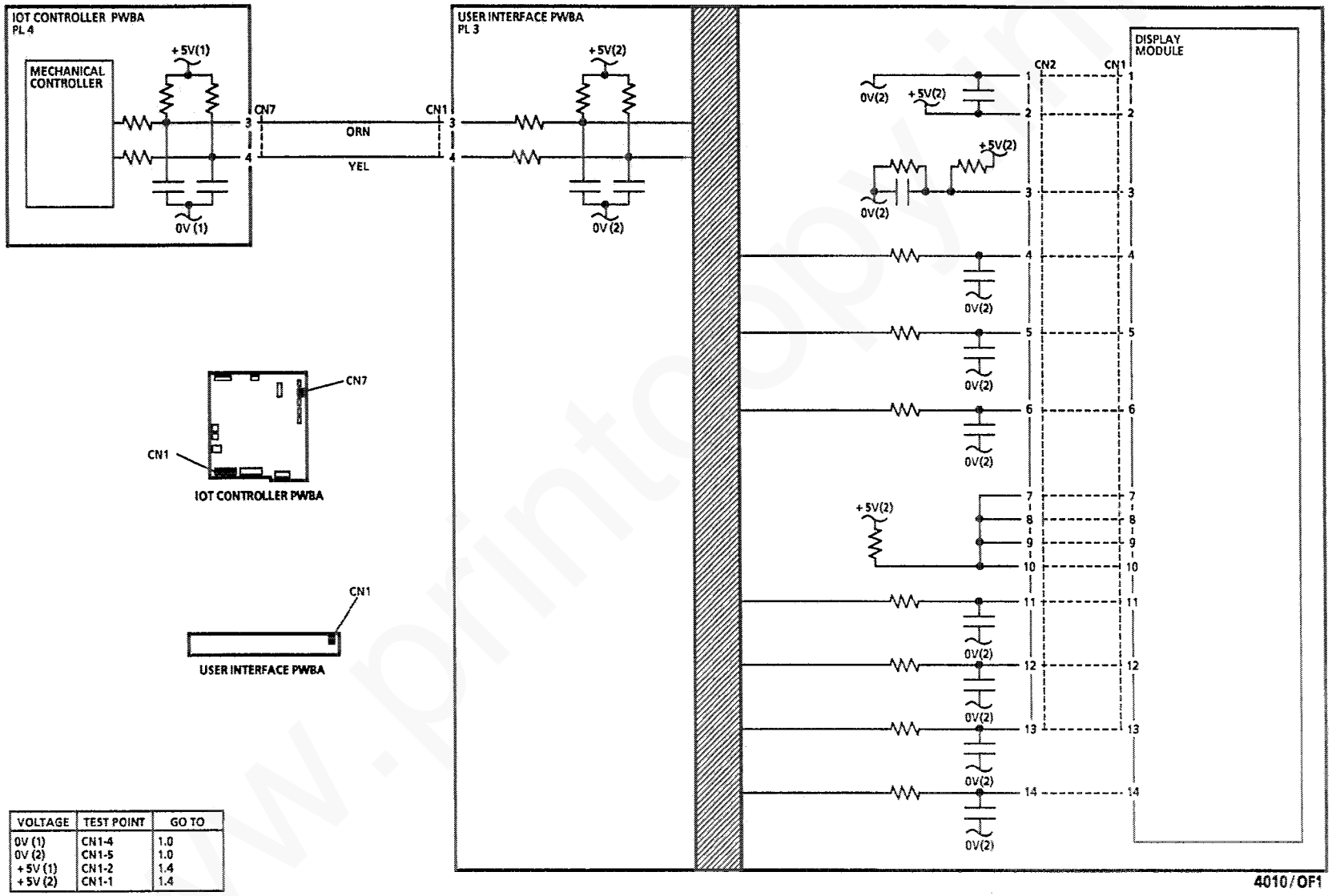


Figure 3. ESS PWBA component location



VOLTAGE	TEST POINT	GO TO
0V (1)	CN1-4	1.0
0V (2)	CN1-5	1.0
+5V (1)	CN1-2	1.4
+5V (2)	CN1-1	1.4

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Figure 3. OF1 circuit diagram

OF4 DOES NOT RESPOND TO HOST

The printer does not respond to any commands sent from the host, but it does print a status sheet.

Initial Actions

Check that the printer is correctly configured for the communications interface being used. If necessary refer to GP 1.1, GP 1.2 or GP 1.3 for instructions on system and printer configuration.

NOTE: It is possible that the printer may not be saving the configuration settings. Check this by switching the printer power off for about thirty seconds and then on again; check whether the configuration settings have been saved. If the settings are not saved go to OF5 Does not save configuration settings RAP.

Reseat the following components:

- host interface cable
- ESS controller PWBA (REP 3.3).

Procedure

Perform either a parallel loopback test (GP 8) or a serial loopback test (GP 9) as appropriate. The loopback test is successful.

Y N

| Replace the ESS controller PWBA (REP 3.3).

The problem is either in the host interface cable or the host. Inform the customer.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

OF5 DOES NOT SAVE CONFIGURATION SETTINGS

When the printer power is switched on the printer returns to the default configuration settings rather than the configurations saved by the customer.

Initial Actions

Note that some options in the emulation menu can only be set temporarily, some options can be either temporary or permanent, and some options can only be set permanently. Check the list below to ensure that the option can be permanently selected.:

- The following items in the emulation configuration menu can only be set temporarily (the option cannot be saved, and will revert to the default setting when the printer is reset or switched off):
  - printer emulation
  - number of copies.
- The following items in the emulation configuration menu can be set either temporarily (without saving the configuration settings) or permanently (by saving the configuration settings):
  - feed
  - form length
  - bit map
  - auto L/F
  - auto C/R
  - auto P/E
  - font cart
  - translation table.
- The following items in the emulation configuration menu can only be set permanently (the configuration setting must be saved and the printer reset for the option to take effect):
  - symbol set
  - font source
  - font number.
  -

Procedure

Refer to GP 1.2, System Configuration, or GP 1.3, and set one or more of the items on the system configuration menu to options other than the default settings. Select SAVE SYSTEM CONFIGURATION to store the settings in NVM. Switch the printer power off for thirty seconds and then switch it on again. Print a status sheet (GP 2) to check the configuration settings. **The new configuration settings have been saved.**

Y N

| |

A B

A B

Replace the IOT controller PWBA (REP 3.1).

Refer to GP 1.2 System Configuration, or GP 1.3, and set one or more of the items on the system configuration menu to options other than the default settings. Select SAVE SYSTEM CONFIGURATION to store the settings in NVM. Switch the printer power off for thirty seconds and then switch it on again. Print a status sheet (GP 2) to check the configuration settings. **The new configuration settings have been saved.**

Y N

| Replace the ESS controller PWBA (REP 3.3).

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

Notes

OF7 NOISE

Use this RAP to diagnose and repair excessive mechanical noise in the printer.

NOTE: While feeding heavier paper stock (such as 90 gsm) from either paper tray, noise and vibration may occur in the upper turn roll area.

Initial Actions

Ensure that the paper weight is 60 gsm to 105 gsm (optimum weight 80 gsm).

If the customer is using special stock (i.e. labels or transparencies) ensure that it is suitable for xerographic purposes.

Inspect the printer for the presence of foreign material i.e. paper, staples or paperclips.

Inspect all components along the paper path for damage or obstructions.

Ensure that the developer unit and print cartridge are properly installed.

Remove the right-side cover (REP 14.3).

Procedure

Switch the printer power on and listen to the machine in standby mode. **The printer is free from excessive noise in standby mode.**

Y N

Y: Inspect the fan and surrounding area to ensure that nothing is catching in the fan.

Generate an internal test document (GP 4) from each paper tray to determine whether printer operation is noisy. **The printer is free from excessive noise in print mode.**

Y N

N: Perform the following actions in the order given:

- Switch the printer power off. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
- Remove the fuser cleaning pad and inspect it to ensure that the plastic casing is not coming into contact with the fuser roll (i.e. if the pad is excessively worn); replace the fuser cleaning pad if necessary.

A B

A B

- Depress the interlock actuator using the interlock cheater. The internal drives will operate for several seconds; observe the operation of the following drive gears to identify the source of the noise:
  - paper feed roller
  - toner roll drive gear
  - fuser roll and drive gear.

The drive gears operate without excessive noise.

Y N

Y: Inspect the noisy components for wear, damage or obstruction. Remove obstructions and replace any worn or damaged components.

Reinstall the developer unit. Depress the interlock actuator using the interlock cheater. Observe the operation of the toner roll. If the toner operation is noisy, inspect the developer unit for wear or damage. **The developer unit is functioning correctly.**

Y N

N: Replace the developer unit.

Reinstall the print cartridge. Depress the interlock actuator using the interlock cheater. Observe the operation of the photoreceptor. If the operation is noisy, inspect the print cartridge for wear or damage. **The print cartridge is functioning correctly.**

Y N

N: Replace the print cartridge.

Manually operate the output drive gears to check for smooth, noise free operation. Ensure that the face-up and face-down output rollers operate correctly. If operation is not smooth, inspect the components for wear, damage or obstruction. **The output drive gears, drive belt and rollers are functioning correctly.**

Y N

N: Remove obstructions and replace any worn or damaged components.

Generate an internal test document (GP 4) from both paper input trays to determine whether noisy operation is restricted to one tray only. **Excessive printer noise is related to paper tray 2 only.**

Y N

N: Perform the following actions in the order given:

- Inspect the paper input path for wear, damage or obstruction. Replace any worn or damaged components.
- Generate an internal test document (GP 4) and listen carefully to the top cover area over the ROS assembly. **The laser scanner unit assembly generates excessive noise.**

Y N

A B C D

Y: Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

N: Replace the laser scanner unit (REP 6.1).

Perform the following actions in the order given:

- Switch the printer power off. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
- Remove paper tray 2 from the base of the printer (REP 7.5 in Section 8).
- Check the adjustment of the paper feed clutch (ADJ 7.1).
- Manually operate the paper tray 2 drive gears to check for smooth, noise free operation of the drive motor, gears, feed rollers and clutch. If operation is not smooth, inspect the components for wear, damage or obstruction. Remove any obstructions and replace any worn or damaged components.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

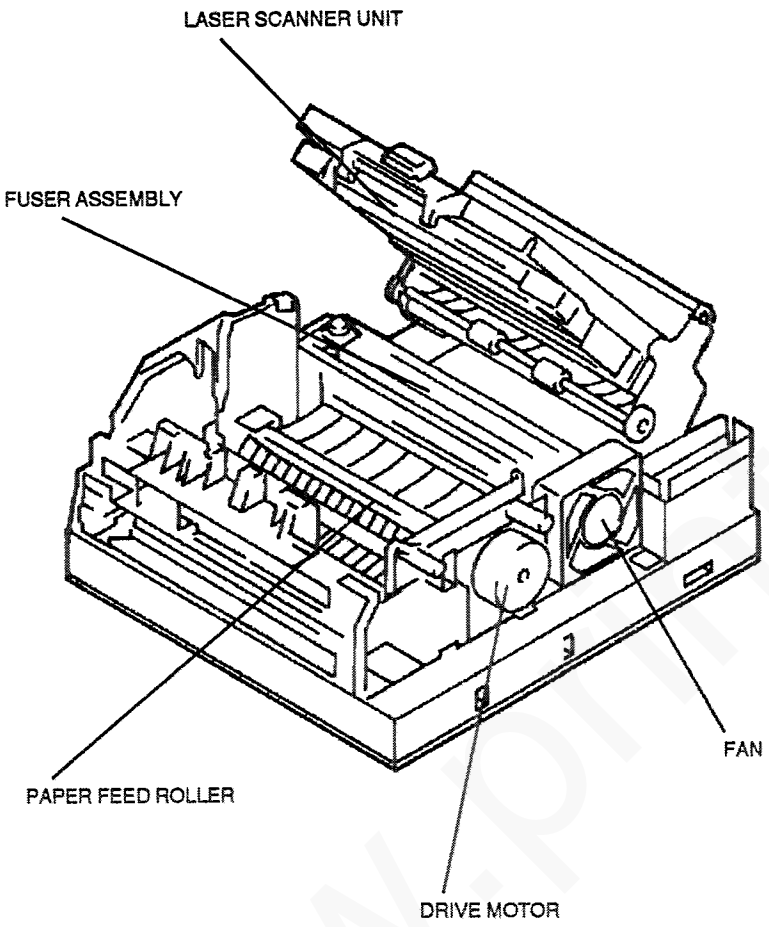


Figure 1. Component locator

OF8 ESS LOCKUPS

The printer will stop printing and instead of indicating that the machine is ready to print, one of the following messages will be displayed on the user interface:

- "PRINTING"
- "PLEASE WAIT"

The buttons on the user interface have no effect while the printer is in this condition.

Procedure

Press the ON LINE button to turn the printer OFF LINE. Press the CONTINUE / RESET button to reset the printer. **The display indicates that the machine is ready to print.**

Y N

Switch the printer power off and then on again. Allow sufficient time for the machine to warm up (sixty seconds). **The display indicates that the machine is ready to print.**

Y N

The user interface is displaying a recognisable error code.

Y N

Replace the ESS controller PWBA (REP 3.3).

Go to the RAP associated with the new error code.

Generate an internal test document (GP 4). **A test print is produced.**

Y N

Replace the ESS controller PWBA (REP 3.3).

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

Generate an internal test document (GP 4). **A test print is produced.**

Y N

Switch the printer power off and then on again. Allow sufficient time for the machine to warm up (sixty seconds). **The display indicates that the machine is ready to print.**

Y N

The user interface is displaying a recognisable error code.

Y N

Replace the ESS controller PWBA (REP 3.3).

Go to the RAP associated with the new error code.

A B

A B

Generate an internal test document (GP 4). **A test print is produced.**

Y N

Replace the ESS controller PWBA (REP 3.3).

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

1.0 Ground Distribution RAP

Procedure

WARNING

Disconnect the power cord before troubleshooting a ground distribution fault. Ensure the electrical safety of the printer is maintained by reconnecting all of the distribution wiring before reinstalling the power cord.

NOTE: Ground distribution faults can be difficult to identify. They can appear as intermittent faults such as static related copy quality, misfeed or random logic faults.

NOTE: Ground distribution faults are identified by continuity checks and visual inspection. Each distribution circuit must be checked in isolation and individually between the source and destination.

To troubleshoot a suspected ground distribution fault the following points should be considdered:

- Ensure that all electrical connectors are mechanically good. Install new components if necessary.
- Check the grounding points for contamination or corrosion. Install new parts if necessary.

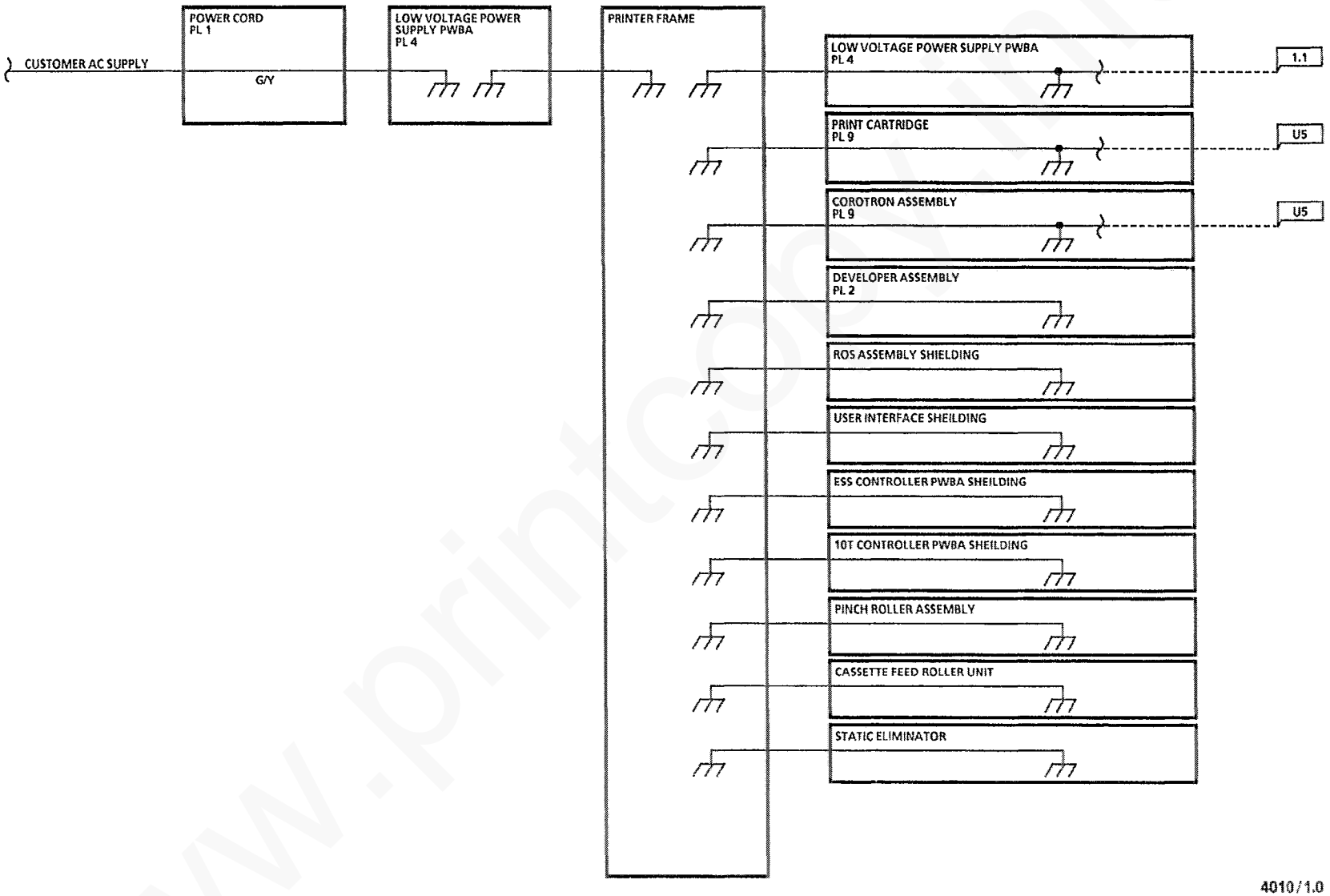


Figure 1. Ground distribution circuit diagram

1.1 0V Distribution RAP

Procedure

WARNING

Disconnect the power cord before troubleshooting a 0V distribution fault

0V distribution faults can be difficult to identify. They can appear as intermittent faults as well as component failure.

A suspected distribution fault must be isolated by disconnection. Continuity checks and visual inspection may reveal broken wiring. Where 0V is distributed, each fan out connection should be isolated and each line of the fan out checked for continuity.

Isolate and check each fan out point. **Each fan out point and line is good.**

Y **N**

| Repair or install new components or wiring.

The distribution source will start at an earth point. Locate the earth point connection and go to the 01A Ground Distribution RAP.

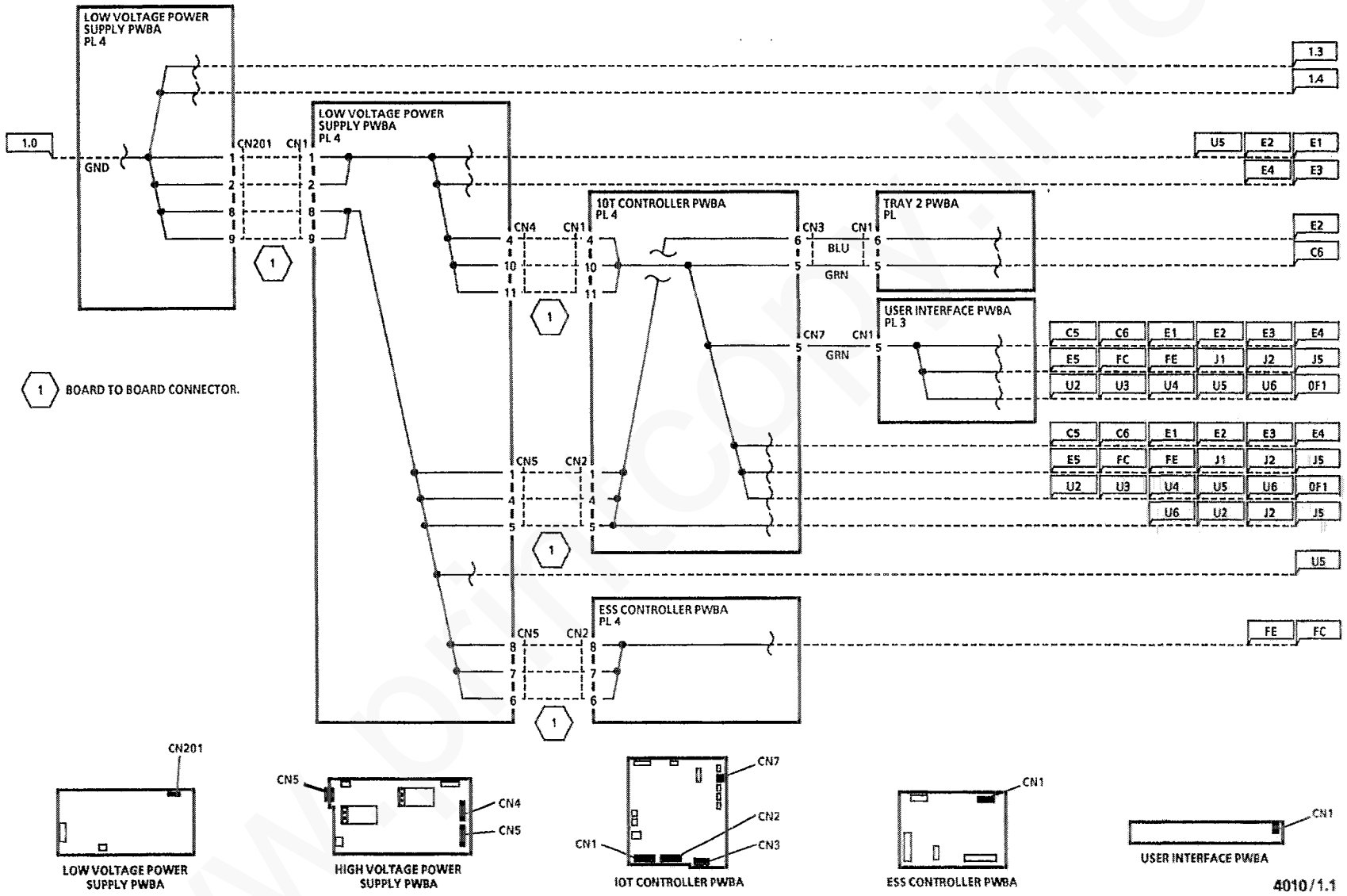


Figure 1. 0V distribution circuit diagram

1.2 AC Power RAP

Procedure

WARNING

Mains voltages can be lethal. Use extreme care when checking mains voltages.

Throughout this RAP, disconnect the power cord when checking for continuity, checking fuses or installing components.

Disconnect the power cord from the printer and the customers AC wall supply outlet. **There is continuity from end to end for each of the conductors of the power cord.**

Y N

Check the fuse inside the plug of the power cord (if fitted) **The fuse is good.**

Y N

Install a new fuse.

If the fuse has failed or there is no fuse fitted install a new power cord PL1.

Remove the low voltage power supply PWBA (REP 1.1) and check fuse F101 for continuity. **The fuse is good**

Y N

Install a new fuse F101 PL5.

Turn the on/off switch to on and make a check for continuity on the low voltage power supply PWBA between the terminal marked N of the power cord connector and the terminals marked 2B and 3B of the interlock switch. **There is continuity between N & 2B and N & 3B when the interlock switch is actuated.**

Y N

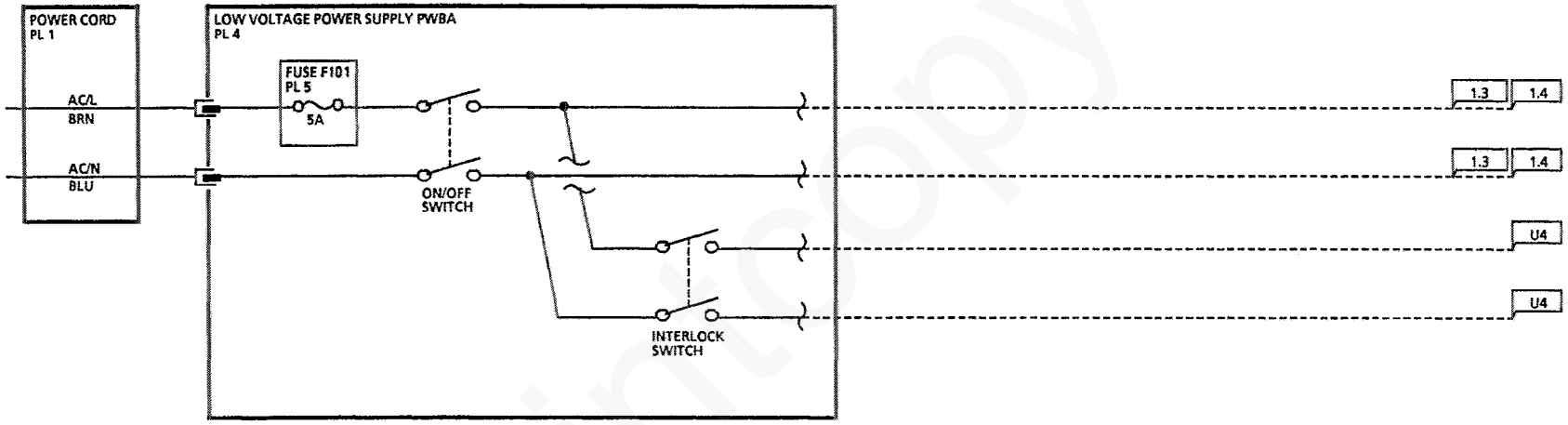
Install a new low voltage power supply PWBA PL4.

Make a check for continuity on the low voltage power supply PWBA between the terminal marked L of the power cord connector and the terminals marked 2B and 3B of the interlock switch. **There is continuity between L & 2B and L & 3B when the interlock switch is actuated.**

Y N

Install a new low voltage power supply PWBA PL4.

The AC components of the low voltage power supply PWBA are good. Go to the Product Specifications in section 6 and check that the customers AC supply conforms to the specifications.



4010 / 1.2

Figure 1. AC power circuit diagram

1.3 +24V generation and distribution RAP

Procedure

WARNING

Mains voltages can be lethal. Use extreme care when working with mains voltages.

Remove the low voltage power supply PWBA (REP 1.1). Make a check for continuity across fuse F102. **The fuse is good.**

Y N

Install a new fuse F102 PL5. Reassemble the printer and make test prints. **The fuse F102 fails again.**

Y N

The printer is now working correctly

Excess current is being drawn by one of the components that use +24V supply. Remove the low voltage power supply PWBA (REP 1.1) and replace the fuse F102. Reinstall the low voltage power supply PWBA, refer to the Circuit Diagrams and isolate, one at a time, by disconnection, each component that is driven by +24V. After each disconnection make some test prints until the fuse does not fail. The Component or circuit that is diconnected at the time contains the fault. Install a new component or if necessary repair the wiring.

(Figure 1) Fabricate a test connector and insert the low voltage power supply PWBA into the safety shroud. Connect the power cord to the low voltage power supply PWBA and switch on. **+24v is available between pins 6 and 9 on CN201 when the interlock switch is actuated.**

Y N

Install a new low voltage power supply PWBA (REP1.1).

Make checks for continuity on the circuit to the component that is not receiving the +24V supply. If necessary repair the wiring or install new components.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

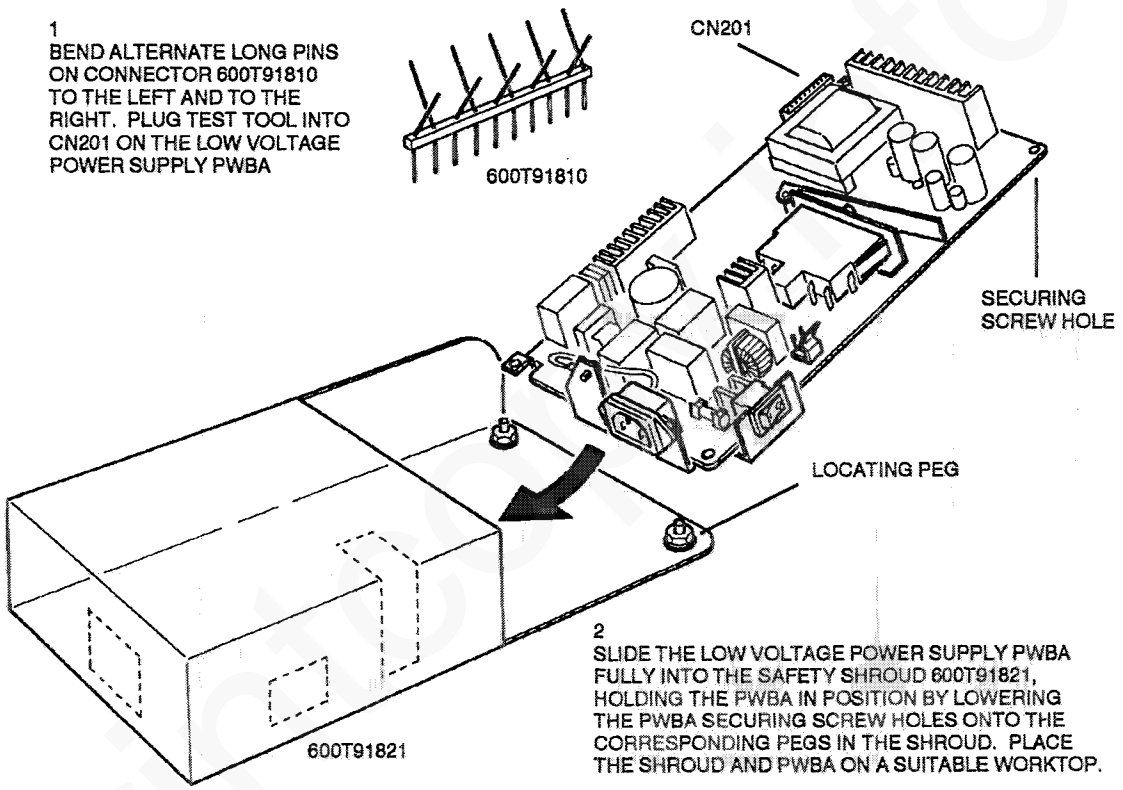


Figure 1. Safety shroud and test connector

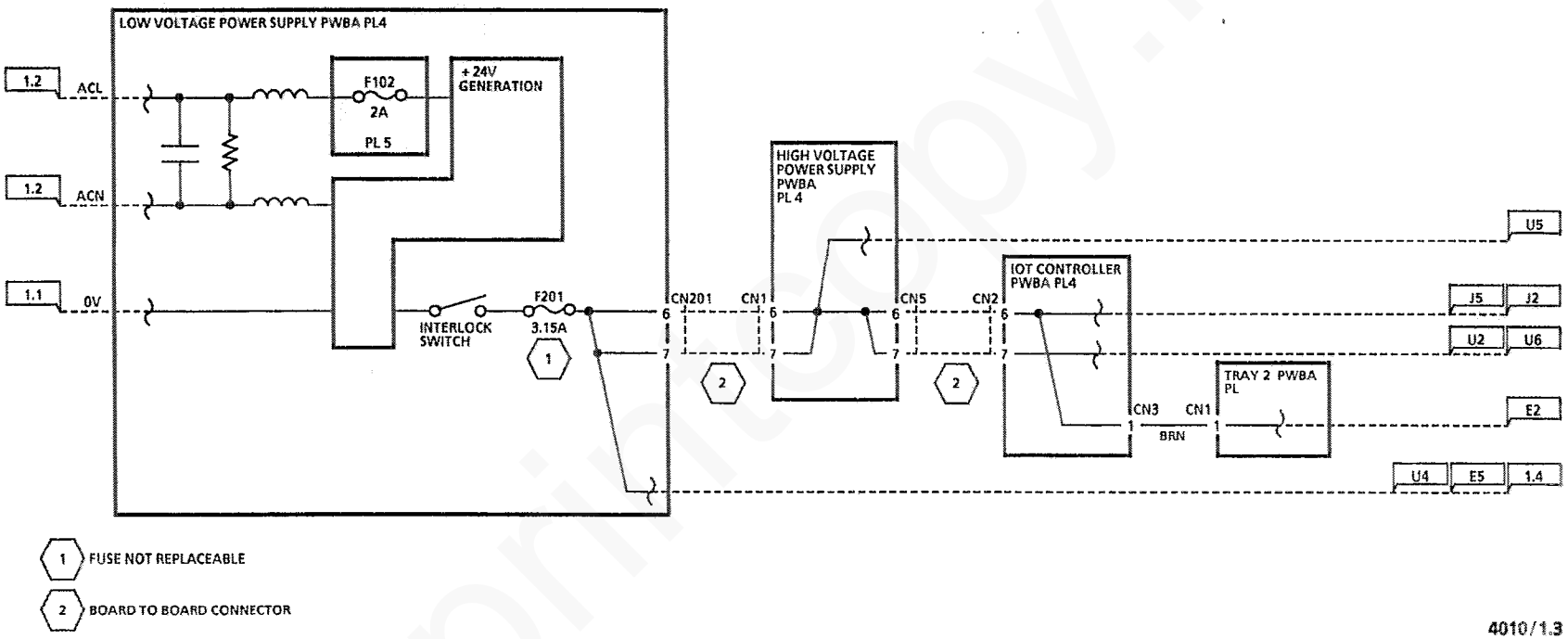


Figure 2. +24V generation and distribution circuit diagram

1.4 +5V generation and distribution RAP

Procedure

WARNING

Mains voltages can be lethal. Use extreme care when working with mains voltages.

Refer to the 1.3 +24V generation and distribution Rap. **The low voltage power supply PWBA is generating +24V.**

Y N

| Install a new low voltage power supply PWBA (REP 1.1)

(Figure 1) Fabricate a test connector and insert the low voltage power supply PWBA into the safety shroud. Connect the power cord to the low voltage power supply PWBA and switch on. **+5v is available between pins 3 and 9 on CN201 when the interlock switch is actuated.**

Y N

| Install a new low voltage power supply PWBA PL4.

Make checks for continuity on the circuit to the component that is not receiving the +5V supply. If necessary repair the wiring or install new components.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

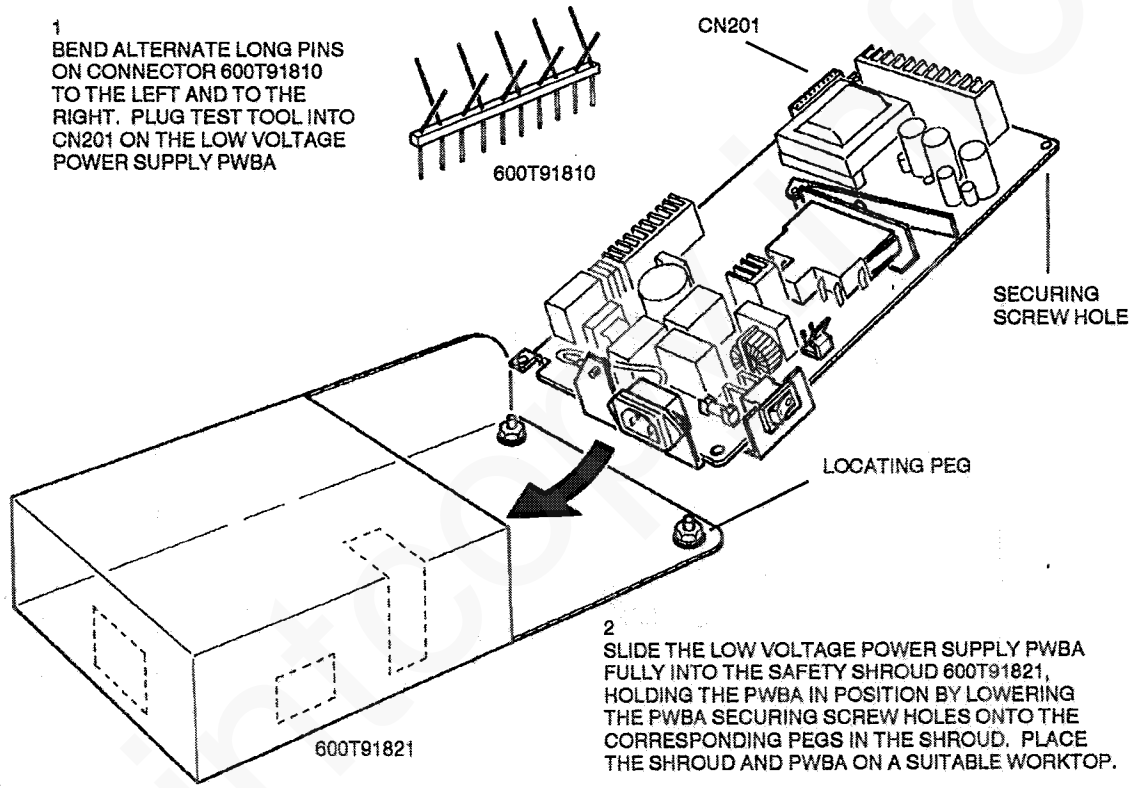


Figure 1. Safety shroud and test connector

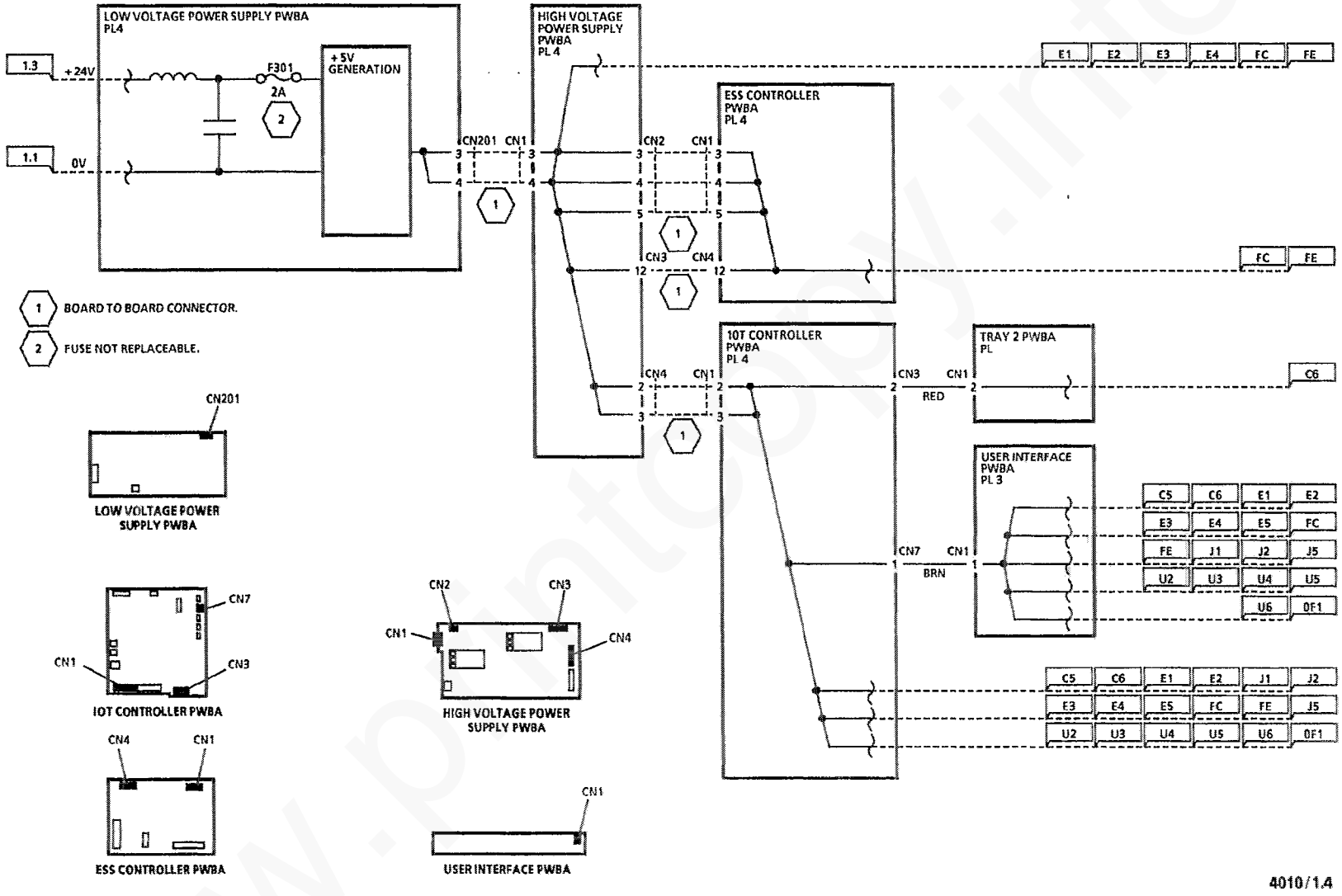


Figure 2. +5V generation and distribution circuit diagram

1.5 Voltage Measurement RAP

Procedure

Note: When measuring AC voltages the correct polarity matching of the input with respect to the input terminals of the meter need not be observed.

Refer to the voltage generation and distribution RAPs for the procedures involved in voltage measurement:

1.0 Ground distribution RAP
1.1 0V distribution RAP
1.2 AC power RAP
1.3 +24V generation and distribution RAP
1.4 +5V generation and distribution RAP.

WARNING

Ensure that all voltages fall within the tolerances specified in Table 1.

VOLTAGE	TOLERANCES	METER SETTINGS		
		Digital Multimeter	Taylor Meter	Weston Meter
AC SUPPLY	USO & XCI: 98V to 128V RX: 198V to 264V	USO, 200 Volt range, AC and V RX, 750 Volt range, AC and V	USO, 150 Volt range, AC and V RX, 300 Volt range, AC and V	USO, 150 Volt range, AC and V RX, 300 Volt range, AC and V
+24V	21.6V to 26.4V	200 Volt range, DC and V	30 Volt range, DC and V	30 Volt range and DC + Ohms
+5V	4.75V to 5.25V	20 Volt range, DC and V	6 Volt range, DC and V	6 Volt range and DC + Ohms
0V Supply, Ground	Continuity	200 Ohm range, DC and Ohms	x1 and Ohms	X1 and DC + Ohms
0V Signal	0V to 1.5V	2 Volt range, DC and V	1.5 Volt range, DC and V	1.5 Volt range and DC + Ohms

Table 1. Voltage measurement

3. Image Quality Repair Analysis Procedures

Introduction

This section contains Image Quality RAPs to assist you in repairing image quality defects. There is an Image Quality Entry RAP and an Image Quality Checkout to help you identify the type of defect and the corrective actions required.

Throughout these procedures the term "vertical" refers to a top-to-bottom orientation, and the term "horizontal" refers to a side-to-side orientation.

IQ 1.1
Image Quality Entry RAP

Procedure

Use the image quality flow chart (Figure 1) to understand the structure and call flow through Section 3, Image Quality.

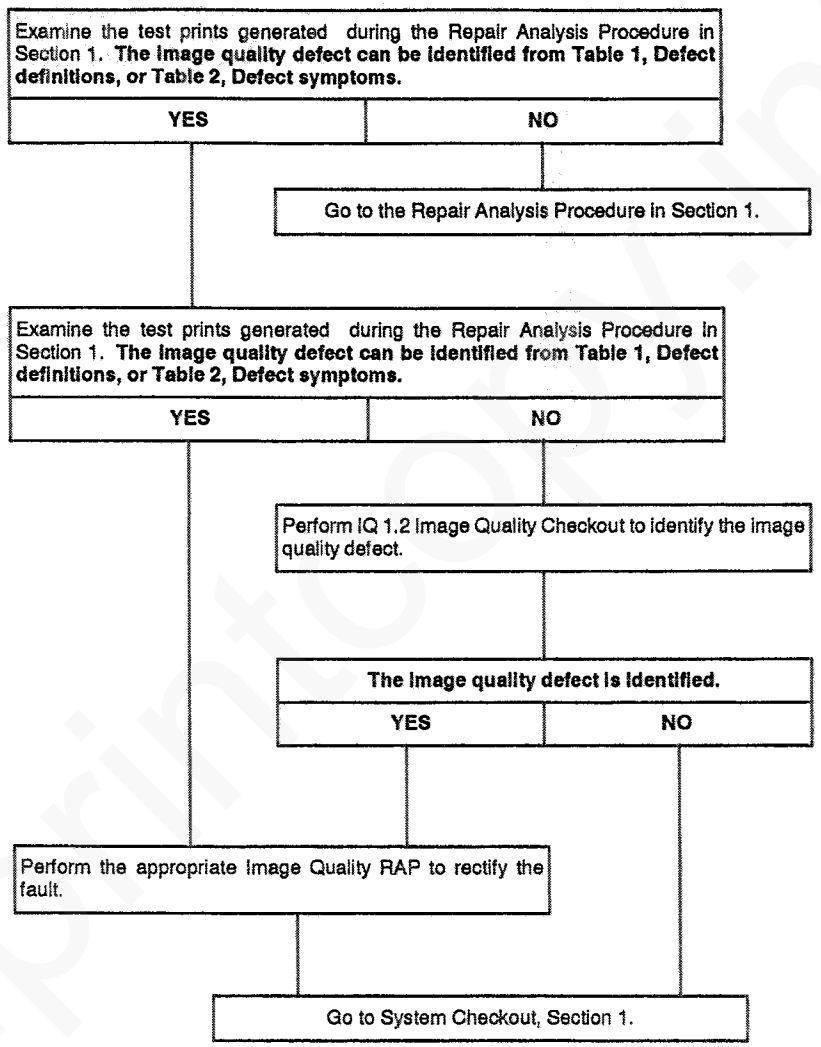


Figure 1. Image Quality Flow Chart

Table 1. Image Quality Defect Definitions

Defect definitions	Go to
Background: uniform toner contamination in non-image areas. Refer to IQ 1.2, Background. **Dark prints:** very dark background with a visible image.	IQ 2
Very dark prints: the image is only just visible on a black background. **Black prints:** completely covered with toner and no visible image.	IQ 2
Blank prints: prints with no visible image. **Very faint image:** the image is just visible on part or all of the print.	IQ 3
Character defects: garbled print or missing, repeating or scrambled characters.	IQ 4
Damaged print: creases, excessive curls, cuts, folds or embossed marks.	IQ 5
White patches: faint image on a low background. **Line and band deletions:** line and band deletions up to half print width. Blur deletions: small areas of the iage appear to be out of focus.	IQ 6
White spots and mottle: solid areas are marked with irregular white areas. White areas with a developer bead at the centre indicates developer bead carryover. **Black marks:** additional images that repeat on the prints (they could occur only on the top or bottom edge of the prints). **Streaks and bands:** defects in or across the process direction. **Smears (pre-fuser):** part of the image is disturbed in the process direction. **Scratches:** lines of missing image or black lines, always repeated in exactly the same place on the prints.	IQ 7
Faint image: **Low solid area density:** the solid areas on the test print are not black. Refer to IQ 1.2, Solid Area Density.	IQ 8
Misregistration: the image is not properly aligned with the paper in a vertical or horizontal direction.	IQ 9
Residual images: the image from a previous print, which was not removed during the cleaning process, has been developed on the current print.	IQ 10
Skew: angular displacement of the image from its intended position on the print. Refer to IQ 1.2, Skew.	IQ 11
Unfused image: part or all of the image is unfused. Refer to IQ 1.2, Fusing.	IQ 12
Lines/streaks: dark lines, gray lines, streaks or narrow bands of background that run vertically on prints.	IQ 13
Varying image quality across the print: the solid area density of the image varies across the print.	IQ 14
Resolution: the single pixel lines cannot be reproduced clearly on the print. Refer to IQ 1.2, Resolution. **Distortion:** the outline of an image has been reshaped or modified from the intended image, but without any loss of information.	IQ 15

Table 2. Image Quality Defect Symptoms

Defect definitions	Go to
Solid or dotted lines in the process direction.	IQ 15
Rooster tails (solid areas have fuzzy edges)	IQ 8
Strobe effect on the 1 on 1 off lines on the test pattern.	IQ 15
Black print with white stripes near the lead edge across process direction.	IQ 15
Random black lines across the process direction.	IQ 15
Faint image at front of prints.	IQ 8
Small area of image distorted (occurs randomly).	IQ 15
Wavy line in process direction.	IQ 15

IQ 1.2
Image Quality Checkout

This procedure is used to check that the quality of the printed image meets the relevant specifications

NOTE: The recommended type of transparency material must be used with this printer to achieve acceptable print quality on trasparencies:

A4	*3R91030*
11" (white lead edge)	*3R2780*
11" (clear)	*3R3117.*

Procedure

- Use fresh paper, whenever possible, to check the image quality of prints.
- Ensure that the printer has the correct toner cartridge installed.
- Generate six Internal Test Documents (GP 4) and discard the first four test prints.
- Perform the following checks in the sequence shown. Go to Solid Area Density.

Solid Area Density

Use the solid area density tool (82P520) to measure the variation of solid area density across the test print. **The variation of solid area density is less than 0.4.**

Y N

| Go to the IQ 14 Varying Image Quality RAP.

Use the solid area density tool (82P520) to measure the density of the solid black squares on the test print. **The squares measure equal to or greater than 0.8.**

Y N

| Go to IQ 8 Light Image RAP.

Produce four black test prints (GP 5) and discard the first and last test print. Examine the remaining test prints for deletions. **The test prints are free from deletions larger than 0.5mm wide or 5mm long.**

Y N

| Go to IQ 6 Deletions RAP.

The solid area density on the printed test patterns is acceptable. Go to Background.

Background

Observe the non-image areas of the two Internal Test Document prints for background.

NOTE: Background will be barely visible on prints for the first 100 prints. Thereafter the background will increase over the product life, but should at all times meet customer requirements. Cold/dry and hot/wet climates may also cause increased background.

The non-image areas are free from excessive background.

Y N

| **The background is uniform.**

| Y N

| | Go to the IQ 14 Varying Image Quality RAP.

| Go to the IQ 2 Background RAP.

The printed test patterns meet the background specification. Go to Fusing.

Fusing

NOTE: The operating environment of the printer is from 10 celsius at 20% relative humidity to 35 celsius at 80% relative humidity. The fusing performance of the printer will vary according to the environment.

- A cold environment will affect the warm-up time and can cause unfused prints.
- The weight (GSM) of the paper or transparency will affect the fusing of the prints.
- High humidity will have an adverse effect on the fusing of prints.
- Glossy paper will affect the fusing of the prints.

Rub the solid black area of one of the test prints (Figure 1, labelled "A") three times with a soft cloth or an eraser. **The image lifts off the surface of the print.**

Y N

Fold the print across two of the solid black areas of one of the test prints (Figure 1, shown by a dotted line) . Observe the solid areas for any breaks along the line of the fold. **Any break in the solid areas measures less than 1mm across the line of the fold.**

Y N

Go to the IQ 12 Unfused Image RAP.

Examine the test prints for creases or wrinkles. **The prints are free from creases and wrinkles.**

Y N

Go to the IQ 5 Damaged Print RAP.

The printed test patterns meet the fusing specification. Go to Resolution.

The printed test patterns meet the fusing specification. Go to Resolution.

Go to the IQ 12 Unfused Image RAP.

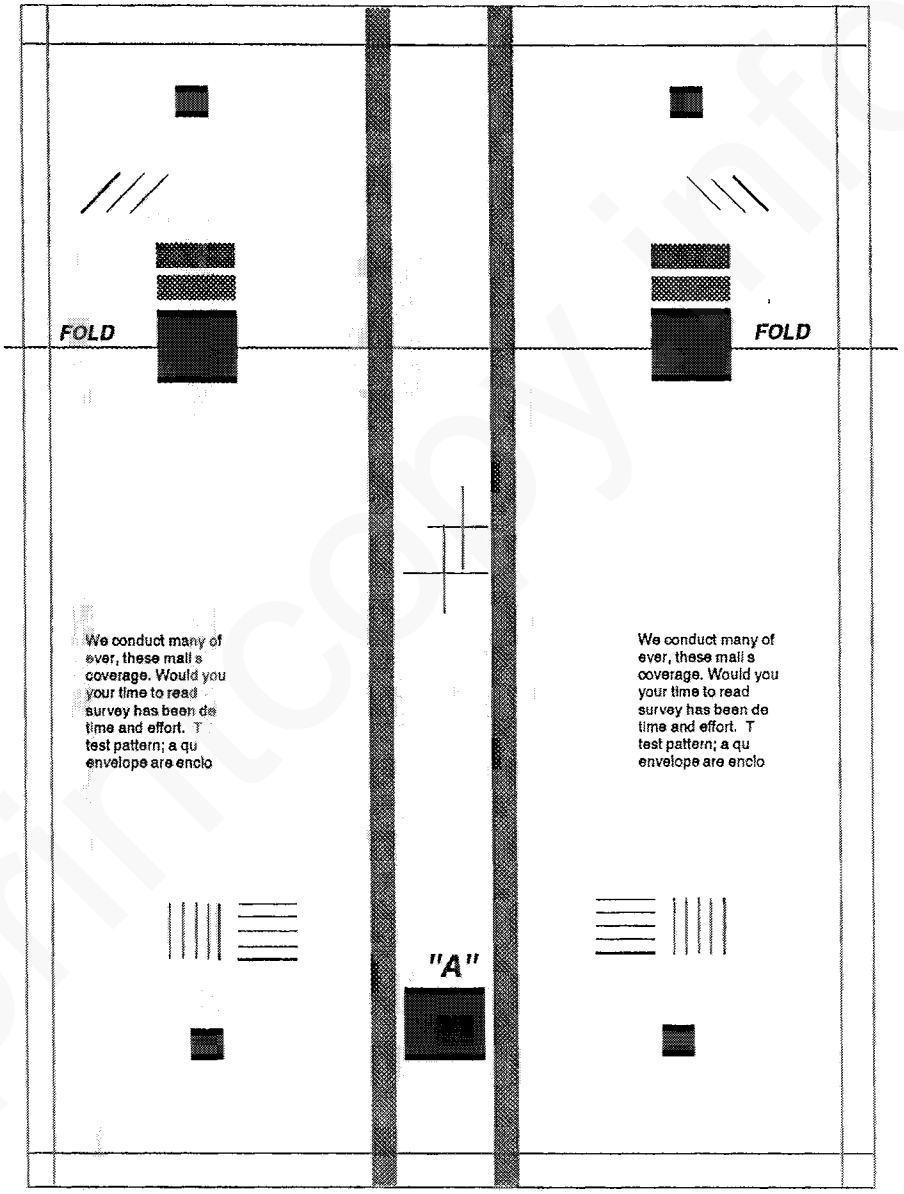


Figure 1. Checking fusing quality of test print

Resolution

Observe the six image areas shown in Figure 1, on both of the internal test document prints. Check the resolution of the following lines in each of the indicated areas:

- The single pixel black line.
- The double pixel black line.

Both lines are clearly visible over their entire length in all six areas.

Y N

Install a new laser scanner assembly (REP 6.1).

The resolution of the printed test patterns is acceptable. Go to Skew.

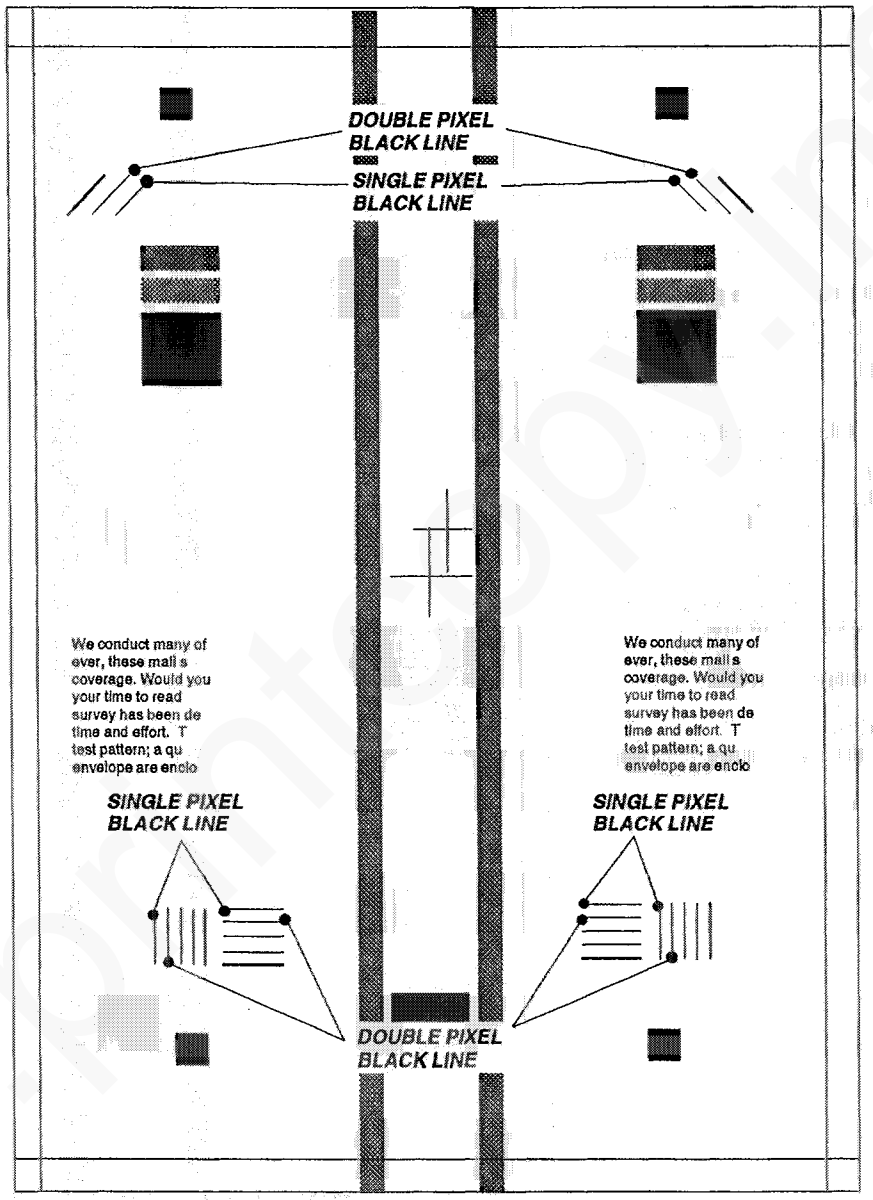


Figure 1. Checking the resolution of the image

Skew

Refer to Figure 1 and measure the dimension between the left edge of the page and the left border of the box on the Internal Test Document.

Measure the dimensions on both of the test prints, at the positions **"A"** and **"B"** shown in Figure 1.

- The difference between the two dimensions on EACH print must not be greater than ± 2.0 mm.

The skew on the test pattern prints meets the specification.

Y **N**

| Go to the IQ 11 Skew RAP.

The printed test patterns meet the skew specification. Go to System Checkout in Section 1.

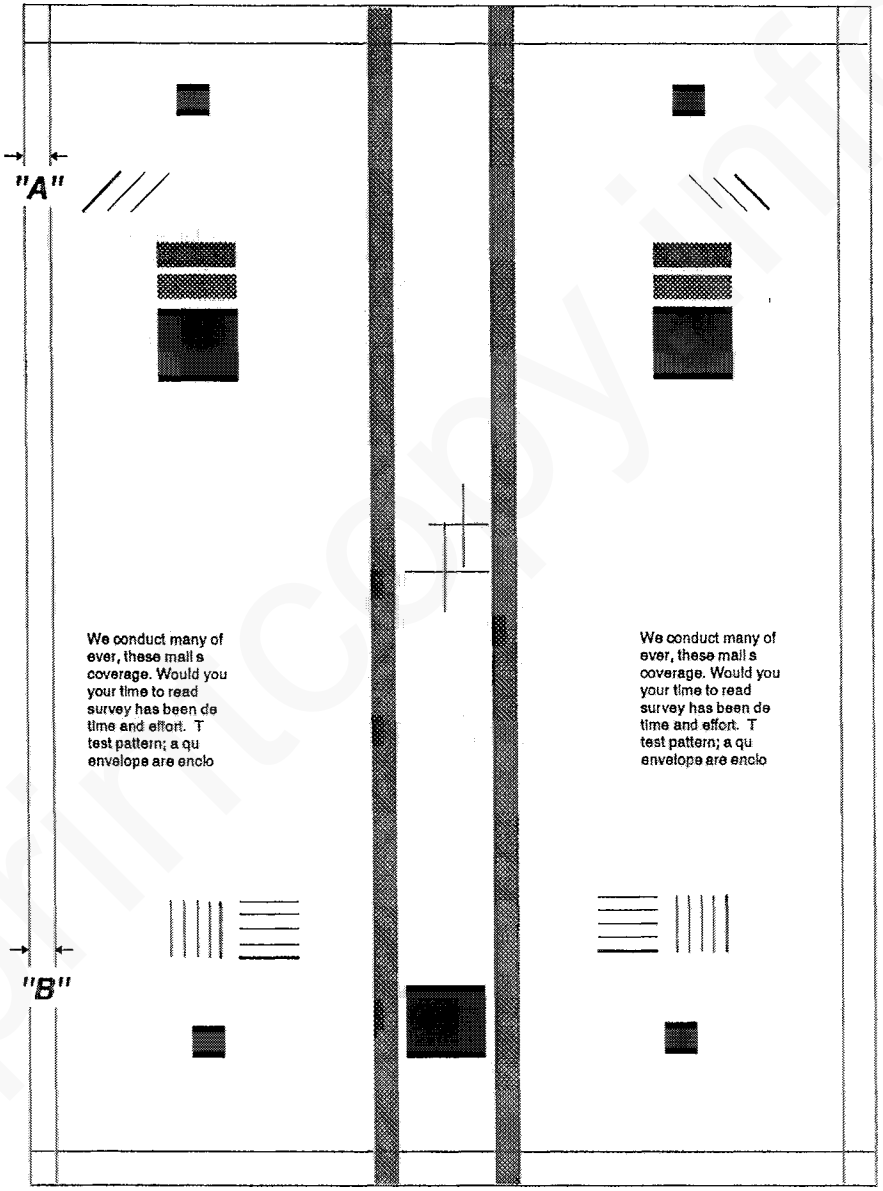


Figure 1. Checking the Image for skew

IQ 2
Background RAP

Definition

A degree of darkness or contamination, overall or localized, in the non-image areas of the prints.

Check

Examine the internal test document to check for excessive background.

NOTE: Background will be barely visible on prints for the first 100 prints. Thereafter the background will increase over the product life, but should at all times meet customer requirements. Cold/dry and hot/wet climates may also cause increased background.

NOTE: If there are dark bands of background running horizontally across the test print at approximately 96 mm vertical intervals, the photoreceptor may have been exposed to light for too long. Replace the print cartridge.

Specification

The non-image area of prints should be free from excessive background.

Initial Actions

- Check the print density setting; set the density to the middle setting in the range (ADJ 9.1).
- Remove the developer unit and print cartridge from the printer.
- Clean the paper path (ADJ 8.1).
- Clean the ROS window using a dry lint-free cloth (ADJ 6.2).
- Ensure that the printer has the correct toner cartridge installed.
- Clean the high voltage terminals and contacts (ADJ 9.1).
- Clean or install new transfer/detack corotron wires (ADJ 9.1).

CAUTION

When cleaning and inspecting the print cartridge, take care not to touch the photoreceptor.

- Carefully wipe any excess toner off the outside of the print cartridge, using a dry cleaning cloth; do not touch the photoreceptor.
- Inspect the photoreceptor on the print cartridge for damage.

Procedure

Check that the photoreceptor is grounded properly by checking for continuity between the outboard edge of the photoreceptor and the machine frame. **There is less than 10 ohms of resistance.**

Y N

Inspect the left-hand end of the photoreceptor shaft and the photoreceptor grounding tab for contamination. Ensure that the photoreceptor grounding tab is contacting the photoreceptor shaft. Clean or install new components as necessary.

Inspect the fuser cleaning pad. **The fuser cleaning pad is excessively stained or dirty.**

Y N

Perform the following:

- Install a new print cartridge
- Install a new developer assembly
- Install a new fuser assembly (REP 10.1).

Install a new fuser cleaning pad.

Increase and then decrease the print density (ADJ 9.4); generate an Internal Test Document for each density setting. **The degree of background changes** (indicating that the high voltage power supply PWBA is operating correctly).

Y N

Perform the U5 HT FAILURE RAP.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

IQ 3
Blank Prints

Definition

The entire print is blank.

Specification

The prints should be clearly readable.

NOTE: If there is any visible image, go to IQ 8, Light Image RAP. If any backgound is visible, go to IQ 2, Background RAP.

Initial Actions

- Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit.
- Ensure that there is adequate toner in the developer unit.
- Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit.
- Clean the high voltage terminals and contacts (ADJ 9.1).

Procedure

Check the toner motor belt in the developer unit (Figure 1). **The toner motor belt is correctly installed.**

Y N

Reinstall or install a new toner motor drive belt.

Check the distribution of toner on the magnetic roll. **The toner is evenly distributed along the length of the roll.**

Y N

Install a new developer unit.

Check the light path between the ROS assembly and the print cartridge. **The light path is unobstructed.**

Y N

Remove the obstruction.

Check that the photoreceptor is grounded properly by checking for continuity between the outboard edge of the photoreceptor and the machine frame. **There is less than 20 ohms of resistance.**

Y N

Inspect the left-hand end of the photoreceptor shaft and the grounding tab for contamination. Ensure that the grounding tab is contacting the photoreceptor shaft. Clean or install new components as necessary.

A

A

Perform the following actions in the order given:

- Perform the U5 HT FAILURE RAP.
- Install a new laser scanner unit (REP 6.1).

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

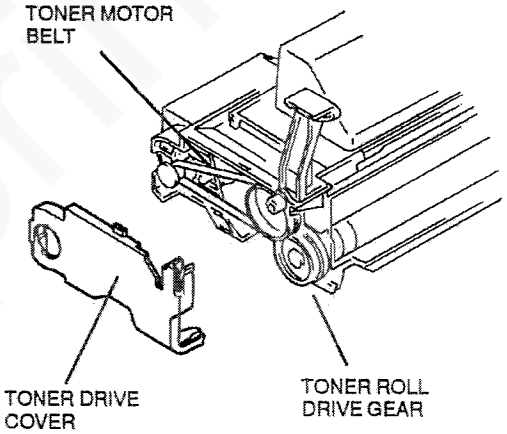


Figure 1. Toner motor belt

IQ 4
Character Defects

Definition

Garbled print or missing, repeating or scrambled characters. Any problem relating to font data or character generation. If parts of the image are deleted go to the IQ 6, Deletions RAP.

Check

Ask the customer to print the job that exhibits the character defects.

Specification

All character sets should print out as shown in the font catalogues or in the user documentation.

Initial Actions

- Check that the printer, host computer and software are correctly configured.
- Check that the host to printer interface cable is not too long. The maximum permissible length is:
  - Centronics parallel 10 metres (33 feet)
  - Serial RS232C 15 metres (50 feet).

Procedure

Switch the power to the printer off and reset the software on the host computer.

Switch the power to the printer on.

Generate a status sheet (GP 2) and verify the settings with the customer. Check whether the printer is configured for full page bitmap operation. At least 1.5 MBytes of DRAM is necessary for full bitmap operation. **The printer settings are correct.**

Y N

Amend the printer configuration and the system configuration (GP 1.1, GP 1.2 or GP 1.3).

Inspect the status sheets for character defects. **The status sheet is free from defects.**

Y N

Inspect the status sheet to identify the defect. **The defect is associated with a plug-in font cartridge.**

Y N

Perform the following:

- Install a new IOT controller PWBA (REP 3.1)
- Install a new laser scanner unit (REP 6.1).

Install a new font cartridge.

A

A

Generate an internal test document (GP 4). **The test print is free from defects.**

Y N

Perform the following:

- Install a new ESS controller PWBA (REP 3.3)
- Install a new IOT controller PWBA (REP 3.1)
- Install a new laser scanner unit REP 6.1).

Set the printer configuration (GP 1.1) and system configuration (GP 1.2) for parallel interface and ask the customer to configure the host computer and software for parallel interface. Send a print job from the host computer to the printer via the parallel interface. **The prints are free from defects.**

Y N

Perform the parallel loopback test (GP 8). The parallel loopback test is succesful.

Y N

Install a new ESS controller PWBA (REP 3.3).

Inform the customer that the problem is with either the interface cable, or the settings of the host computer or software.

The serial interface option is fitted.

Y N

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

Set the printer configuration (GP 1.1) and system configuration (GP 1.2) for serial interface and ask the customer to configure the host computer and software for serial interface. Send a print job from the host computer to the printer via the serial interface. **The prints are free from defects.**

Y N

Perform the serial loopback test (GP 9). **The serial loopback test is successful.**

Y N

Install a new ESS controller PWBA (REP 3.3).

Inform the customer that the problem is with either the interface cable, or the settings of the host computer or software.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

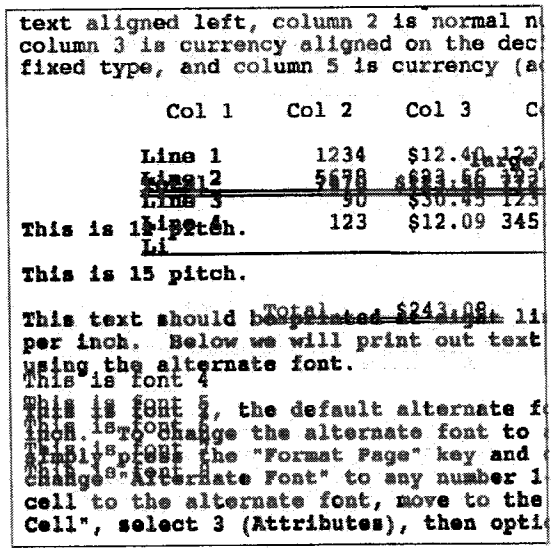


Figure 1. Character defects

IQ 5
Damaged Print

Definition

Wrinkles, creases, excessive curl, cuts, folds or any other paper defects that are present on the prints.

NOTE: A noticeable amount of curl will be produced on the paper.

Specification

There should be no wrinkles, creases or folds visible on the prints.

Initial Actions

- Ensure that the paper weight is acceptable (60 gsm to 105 gsm).
- Check the paper for dampness; load fresh paper into the paper tray if necessary.
- If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic purposes.

NOTE: The recommended type of transparency material must be used with this printer to achieve acceptable print quality on trasparencies:

A4	*3R91030*
11" (white lead edge)	*3R2780*
11" (clear)	*3R3117.*

- Inspect all components along the paper path for damage or contamination, or obstructions that could damage the paper.
- Clean the paper path (ADJ 8.1).

Procedure

Examine the test prints for damage. **The prints are free from cuts.**

Y N

Y: Perform the following checks:
- Check the retard pad for damage.
- Check for deformed guides and burrs.
- Check for deformed fuser stripper fingers; if the fuser stripper fingers are damaged, install a new fuser assembly (REP 10.1).

The prints are free from folds.

Y N

A B

A: Check the paper path rollers for:
- contamination
- loose or missing springs.

Check the fuser exit area for any paper that may be blocking the path.

The prints are free from embossed marks.

Y N

N: Check the paper path for obstructions such as sticky labels or torn pieces of paper.

The prints are free from excessive curl.

Y N

N: Go to ADJ 10.1, Adjusting Fuser Temperature.

The prints are free from creases.

Y N

N: Perform the following checks:
- Check the fuser roll and pressure roll for wear and damage; install a new fuser assembly if necessary (REP 10.1).
- Check for swelling of the pressure roll; install a new fuser assembly if necessary (REP 10.1).
- Inspect the fuser roll tension arms and springs; install a new fuser assembly if necessary (REP 10.1).
- Go to ADJ 10.1, Adjusting Fuser Temperature.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

IQ 6
Deletions

Definition

An area of the print where the image is missing or extremely light.

Specification

Deletions of white or black areas shall be less than 0.5mm in width and less than 5mm in length..

Initial Actions

- Check if machine serial number is prior to 1005561 (USO), (XCI) or 2017901 (RX). If yes, and machine location altitude is greater than 1000 metres (3300 ft.), perform altitude adjustment procedure (ADJ 9.6).
- Ensure that paper weight is acceptable (60 gsm to 105 gsm).
- Check the paper for dampness; load fresh paper into the paper tray if necessary.
- If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic purposes.

NOTE: The recommended type of transparency material must be used with this printer to achieve acceptable print quality on trasparencies:

A4	*3R91030*
11" (white lead edge)	*3R2780*
11" (clear)	*3R3117.*

- Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit.
- Ensure that there is adequate toner in the developer unit.
- Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit.
- Clean the high voltage terminals and contacts (ADJ 9.1).
- Clean the transfer/detack corotron wires (ADJ 9.2), and the photoreceptor corotron wire (ADJ 9.3).
- Inspect all components along the paper path for damage or contamination, or obstructions that could damage the paper.
- Clean the paper path (ADJ 8.1).
- Inspect the photoreceptor on the print cartridge for damage.
- Reinstall the developer unit and print cartridge.
- Clean the ROS window (ADJ 6.2).

Procedure

Produce six Black Test Prints (GP 5) and discard the first two prints.

Examine the test prints to classify the problem, then perform the appropriate RAP on the following pages:

- The deletions extend vertically across the long dimension of the page (Figure 1).
- The deletions extend horizontally across the short dimension of the page (Figure 2).
- The deletions appear localised to small areas of print, and may appear as random spot deletions (Figure 3).

When the appropriate part of this RAP has been completed, go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

Vertical deletions

Check that there no obstructions such as dust or lint fibres between the ROS assembly and the print cartridge.

Check that there are no scratches on the ROS window; install a new ROS if necessary (REP 6.1).

Check that there are no obstructions between the print cartridge and the developer assembly.

Check that there are no burrs or scratches on the paper transport assemblies.

Remove the developer assembly and print cartridge. Disengage the print cartridge from the developer assembly. Perform the following checks:

- Rotate the developer gear clockwise and check that toner is distributed evenly across the length of the magnetic roll; install a new developer unit if necessary.
- Inspect the photoreceptor for surface damage in the area corresponding to the deletion; install a new print cartridge if necessary.

Remove the fuser assembly and inspect the fuser roll and pressure roll for surface damage; reinstall or install a new fuser assembly (REP 10.1).

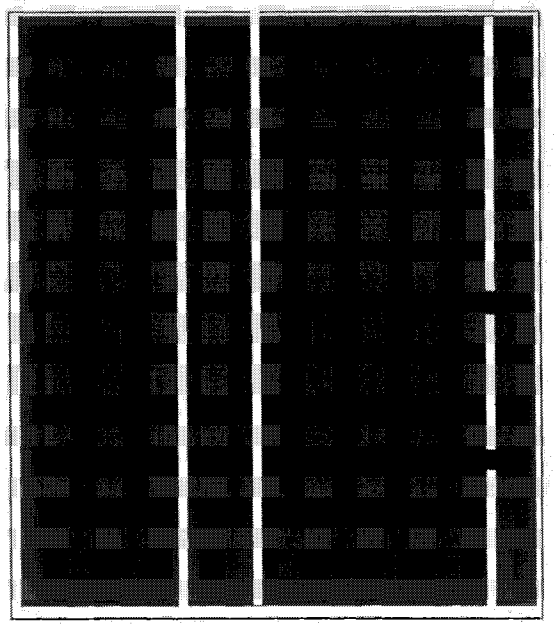


Figure 1. Vertical deletions

Horizontal deletions

NOTE: Horizontal deletions may be present with no loss of information. Generate a status sheet (GP 2) and check that the printer is configured for full page bitmap operation. If the printer is not configured for full page bitmap, ask the customer to reconfigure the printer using the emulation configuration procedure in the User Guide. At least 1.5 Mbytes of DRAM is necessary for full bitmap configuration.

Remove the developer assembly and print cartridge. Disengage the print cartridge from the developer assembly. Rotate the developer gear and check for the following conditions:

- Damaged or binding gears and drive components
- Uneven distribution of toner on roll.

If the deletions appear at regular 96mm vertical intervals, it is possible that a portion of the photoreceptor may have been damaged. Inspect the photoreceptor for surface damage or contamination; install a new print cartridge if necessary.

It is possible that deletions could be caused by an intermittent fault in the laser scanner unit; go to the IQ 15 Laser Fault Analysis RAP.

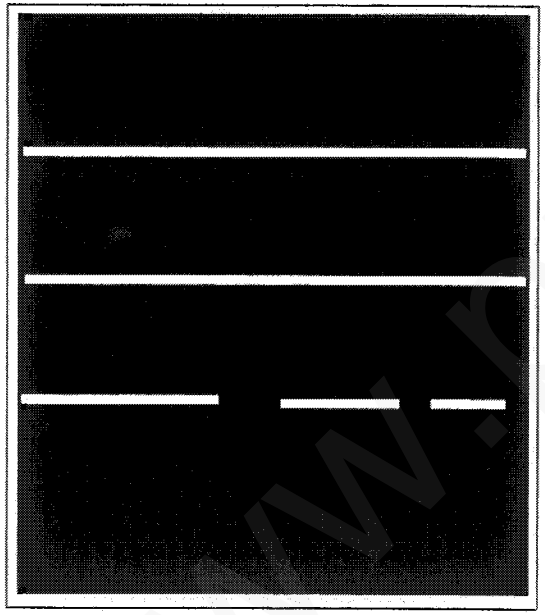


Figure 2. Horizontal deletions

Spot deletions

If the deletions appear at regular 96mm vertical intervals, it is possible that a portion of the photoreceptor may have been damaged. Remove the developer assembly and print cartridge. Disengage the print cartridge from the developer assembly and inspect the photoreceptor for surface damage or contamination; install a new print cartridge if necessary.

Ensure that the fuser temperature is set to the correct setting (ADJ 10.1).

Remove the fuser assembly and inspect the fuser roll and pressure roll for surface damage (ADJ 10.1); reinstall or install a new fuser assembly (REP 10.1).

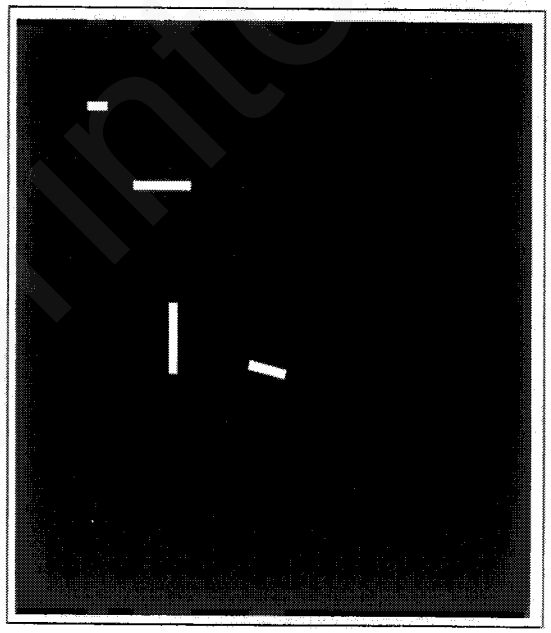


Figure 3. Spot deletions

IQ 7
Extraneous Marks

Definitions

Marks, spots and scratches

- Additional images that repeat on the print.

White spots and mottle

- Solid areas marked with irregular white areas.

Streaks and bands

- Dark areas in the process direction or across the process direction.

Smears

- Part of the image disturbed in the process direction.

Specification

No more than eight white spots are permitted on a single page; no more than twenty black spots are permitted on a single page.

Initial Actions

- Check if machine serial number is prior to 1005561 (USO), (XCI) or 2017901 (RX). If yes, and machine location altitude is greater than 1000 metres (3300 ft.), perform altitude adjustment procedure (ADJ 9.6).
- Ensure that paper weight is acceptable (60 gsm to 105 gsm).
- Check the paper for dampness; load fresh paper into the paper tray if necessary.
- If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic purposes.

NOTE: The recommended type of transparency material must be used with this printer to achieve acceptable print quality on trasparencies:

A4	*3R91030*
11" (white lead edge)	*3R2780*
11" (clear)	*3R3117.*

- Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit.
- Ensure that the printer has the correct toner cartridge installed and that there is adequate toner in the developer unit.
- Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit.

CAUTION

When cleaning and inspecting the print cartridge, take care not to touch the photoreceptor.

- Carefully wipe any excess toner off the outside of the print cartridge, using a dry cleaning cloth; do not touch the photoreceptor.
- Inspect the photoreceptor on the print cartridge for damage.
- Clean the paper path (ADJ 8.1).
- Clean the high voltage terminals and contacts (REP 9.1).
- Clean or install new transfer/detack corotron wires (ADJ 9.2) and the photoreceptor corotron wire (ADJ 9.3)).
- Clean the ROS window (ADJ 6.2).

Procedure

Check that there are no obstructions between the print cartridge and the developer assembly.

Check that there are no burrs or scratches on the paper transport assemblies.

Check that the photoreceptor is grounded properly by checking for continuity between the outboard edge of the photoreceptor and the machine frame. **There is less than 20 ohms of resistance.**

Y N

Inspect the left-hand end of the photoreceptor shaft and the photoreceptor grounding tab for contamination. Ensure that the photoreceptor grounding tab is contacting the photoreceptor shaft. Clean or install new components as necessary as necessary.

Inspect the fuser cleaning pad. **The fuser cleaning pad is excessively stained or dirty.**

Y N

If the extraneous marks appear at regular 96mm vertical intervals, it is possible that a portion of the photoreceptor has been damaged. Remove the developer assembly and print cartridge. Disengage the print cartridge from the developer assembly. Inspect the photoreceptor for damage. **The surface of the photoreceptor is free from damage or contamination.**

Y N

Install a new print cartridge.

If the extraneous marks appear at regular 64mm vertical intervals, it is possible that a portion of the magnetic developer roll has been damaged. Rotate the developer gear clockwise and check the distribution of toner. **Toner is distributed evenly across the length of the magnetic roll.**

Y N

Install a new developer unit.

A B

A B

Remove the fuser assembly (REP 10.1). Clean the fuser roll and pressure roll and inspect for surface damage. **The fuser roll and pressure roll are free from damage.**

Y N

Install a new fuser assembly (REP 10.1).

Increase and then decrease the print density (ADJ 9.4); generate an internal test document for each density setting. **The darkness of the marks changes** (indicating that the high voltage power supply PWBA is operating correctly).

Y N

Perform the U5 HT FAILURE RAP.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

Install a new fuser cleaning pad.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

IQ 8
Light Image

Definition

The overall image density of the prints is light (under-toned).

Check

Use the Solid Area Density (SAD) Reference Document (82P520) to measure the density of the black squares on the test print.

Specification

The solid area density for all of the solid black squares on the test print must be 1.0 or greater (Figure 1).

All of the #1 lines on the test print must be visible and unbroken.

Initial Actions

- Check if machine serial number is prior to 1005561 (USO), (XCI) or 2017901 (RX). If yes, and machine location altitude is greater than 1000 metres (3300 ft.), perform altitude adjustment procedure (ADJ 9.6).
- Check the print density setting; adjust the setting if necessary (ADJ 9.4).
- Check the paper for dampness; load fresh paper into the paper tray if necessary.
- Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit.
- Ensure that the printer has the correct toner cartridge installed and that there is adequate toner in the developer unit.
- Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit.
- Clean or install new transfer/detack corotron wires (ADJ 9.2) and the photoreceptor corotron wire (ADJ 9.3).
- Clean the ROS window (ADJ 6.2).
- Clean the high voltage terminals and contacts (ADJ 9.1).

Procedure

Check the toner motor belt in the print cartridge (Figure 1). **The toner motor belt is correctly installed.**

Y N

Reinstall or install a new toner motor belt.

Check the distribution of toner on the magnetic roll. **The toner is evenly distributed along the length of the roll.**

Y N

Install a new developer unit.

Check the light path between the ROS assembly and the print cartridge. **The light path is unobstructed.**

Y N

Remove the obstruction.

Check that the photoreceptor is grounded properly by checking for continuity between the outboard edge of the photoreceptor and the machine frame. **There is less than 20 ohms of resistance.**

Y N

Inspect the left-hand end of the photoreceptor shaft and the grounding tab for contamination. Ensure that the grounding tab is contacting the photoreceptor shaft. Clean or install new components as necessary.

Increase and then decrease the print density (ADJ 9.4); generate an internal test document (GP 4) for each density setting. **The density of the test prints changes** (indicating that the high voltage power supply PWBA is operating correctly).

Y N

Perform the U5 HT FAILURE RAP.

Perform the following:

- Install a new print cartridge
- Install a new laser scanner unit (REP 6.1).

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

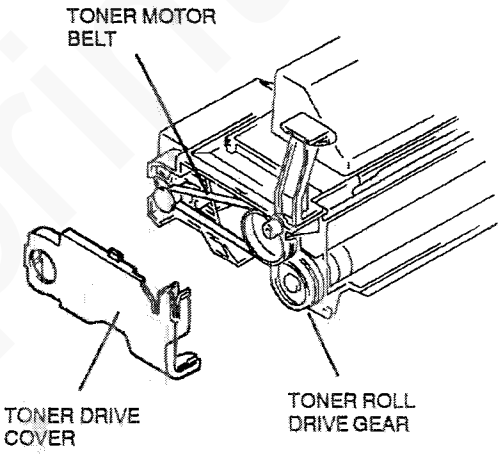


Figure 1. Developer Drive Belt

IQ 9
Misregistration

Definition

The image is not properly aligned with the paper in a vertical or horizontal direction.

Specification

- The vertical registration should be 4.2 mm ± 2.0 mm.
- The horizontal registration should be 4.2 mm ± 2.0 mm.

Initial Actions

- Ensure that the tray 1 paper guides are correctly adjusted, so that the mylar flaps are just pressing on both sides of the paper.
- Check that the tray 1 loading lever is lowered.
- Check that the paper in tray 2 (if installed) is under the snubbers.
- Inspect all components along the paper path for damage or obstructions.

Procedure

Refer to Figure 1 and measure the dimension from the top edge of the paper to the top border, and then measure from the left edge of the paper to the left border on the internal test document. **The image is parallel on the page.**

Y N

| Go to IQ 11, Skew RAP.

The vertical and horizontal registration is acceptable.

Y N

| Perform the vertical and horizontal registration procedure (ADJ 6.1).

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

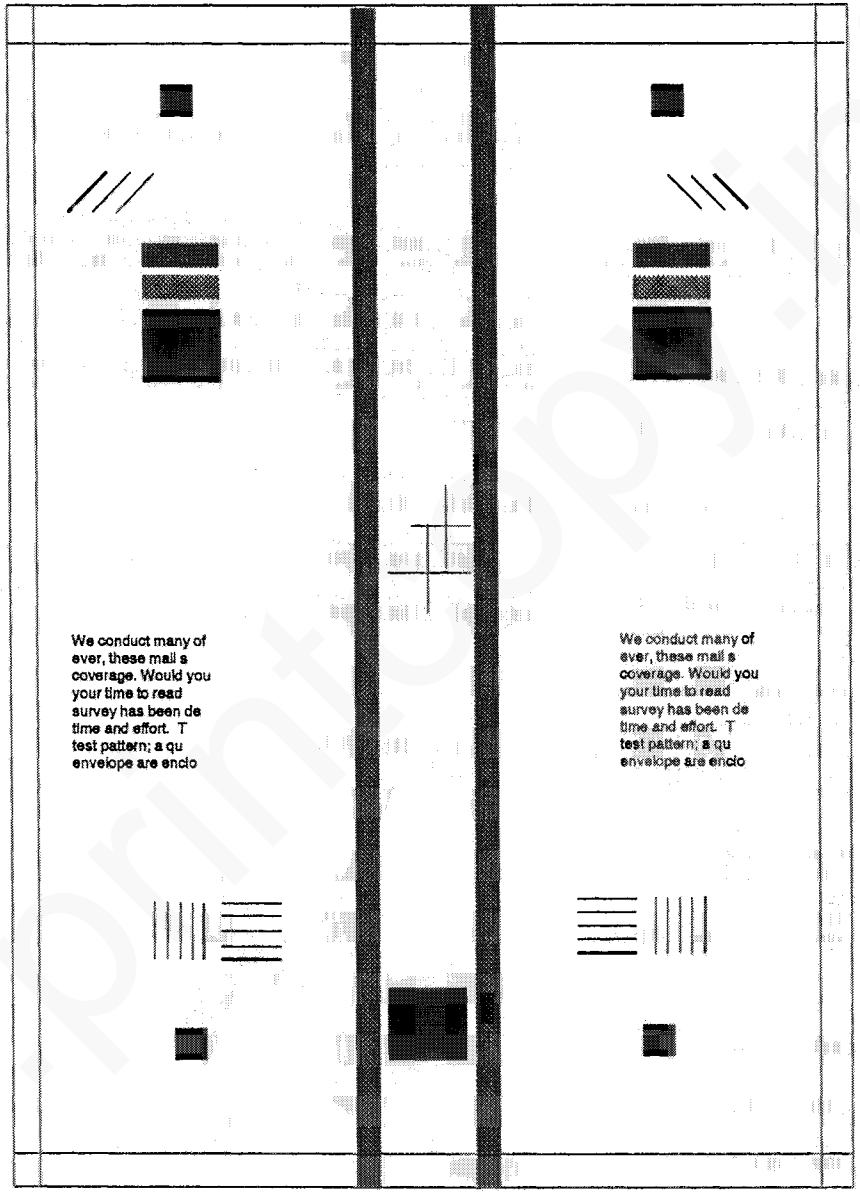


Figure 1. Internal Test Document

IQ 10
Residual Image

Definition

The image from a section of the page in progress, or from a previously printed page, is transferred onto the print. This may be caused by poor drum cleaning, a damaged heat roll, incomplete fusing, incorrect toner, or incorrect transparency material.

Specification

There should be no residual image visible on the test pattern.

NOTE: If there are defects such as garbled print or missing, repeated or scrambled characters go to IQ4, Character Defects RAP. If there are defects such as smears, streaks or bands go to IQ 7, Extraneous Marks RAP.

Initial Actions

- Clean the paper path (ADJ 8.1).
- Ensure that the printer has the correct toner cartridge installed.
- If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic purposes.

NOTE: The recommended type of transparency material must be used with this printer to achieve acceptable print quality:

A4	*3R91030*
11" (white lead edge)	*3R2780*
11" (clear)	*3R3117.*

- Clean the high voltage terminals and contacts (ADJ 9.1).
- Clean or install new transfer/detack corotron wires (ADJ 9.2) and the photoreceptor corotron wire (ADJ 9.3).

Procedure

Examine the test prints to classify the problem. **The residual image is vertically offset by 96 mm.**

Y N

Inspect the fuser cleaning pad. **The fuser cleaning pad is free from excessive staining or contamination.**

Y N

Install a new fuser cleaning pad.

Remove the fuser assembly (REP 10.1). Clean and inspect the fuser roll and pressure roll; install a new fuser assembly if necessary.

Install a new print cartridge.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

IQ 11
Skewed Image

Definition

The image is not parallel to the edges of the page

Specification

The left margin measurement at the top of the page should be within ± 2.0 mm of the left margin measurement at the bottom of the page (Figure 1).

Initial Actions

- Ensure that the paper weight is 60 gsm to 105 gsm (optimum weight 80 gsm).
- If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic purposes.

NOTE: The recommended type of transparency material must be used with this printer to achieve acceptable print quality:

A4	*3R91030*
11" (white lead edge)	*3R2780*
11" (clear)	*3R3117.*

Procedure

If a 300 sheet paper tray is fitted, generate an internal test document from both paper trays.

Measure the left margin at the top and bottom of each test print (Figure 1). **Skewing only occurs when feeding from one paper cassette.**

Y N

Check the paper path for obstructions.

Check the following paper transport components and install new components if necessary:

- Pinch roller assembly (REP 8.2)
- Paper feed roller (REP 8.3)
- Left pinch roller arm (REP 8.4)
- Right pinch roller arm (REP 8.5)
- Pinch roller gear (REP 8.6)
- Front paper guide assembly (REP 8.7).

Skewing only occurs when feeding from Tray 1.

Y N

Ensure the paper in Tray 2 is loaded under the snubbers.

Check that the Tray 2 snubbers are not bent and are free from burrs.

Ensure that the mylar guide fingers are still correctly fitted to the Tray 1 paper guides and that the paper guides are closed up on the paper.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

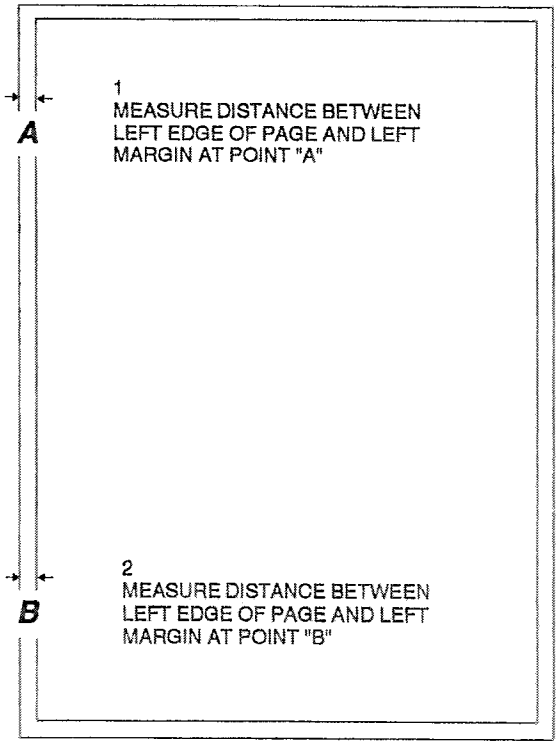


Figure 1. Measuring skew

IQ 12
Unfused Image

Definition

The toner image can be rubbed off the paper.

Initial Actions

- Check the paper for dampness; load fresh paper into the paper tray if necessary.
- Ensure that the paper is not rough, heavily textured, or of rag content.
- Ensure that the printer has the correct toner cartridge installed.

Procedure

Switch off the printer power and disconnect the power cord.

Open the printer cover and disconnect the two wire fuser harness from CN 101 on the low voltage power supply PWBA, to the left of the fuser assembly. Measure the impedance of the fuser rod across the two wires. **The impedance is less than 10 ohms.**

Y N

| Go to the U4 Fuser Failure RAP.

Examine any unfused prints. Note the frequency and the position of the unfused areas.

Go to ADJ 10.1, Adjusting Fuser Temperature and ensure that the fuser temperature is set to 158 degrees celsius, ± 2.5 degrees.

Perform the following checks:

- Check the fuser roll and pressure roll for wear and damage; install a new fuser assembly if necessary (REP 10.1).
- Check for swelling of the pressure roll; install a new fuser assembly if necessary (REP 10.1).
- Inspect the fuser roll tension arms and springs; install a new fuser assembly if necessary (REP 10.1)
- Remove the fuser cover (REP 10.3) and examine the fuser rod, thermistor and thermal fuse for damage; install a new fuser rod or fuser cover assembly if any parts are damaged.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

IQ 13
Lines / Streaks

Definition

Dark lines, gray lines, streaks or narrow bands of background that run vertically on prints.

Specification

There should be no vertical line/streaks (wider than 0.5mm and longer than 5mm) that repeat on successive prints.

Initial Actions

- Clean the paper path (ADJ 8.1).
- Clean or install new transfer/detack corotron wires (ADJ 9.2) and the photoreceptor corotron wire (ADJ 9.3).
- Clean the ROS window (ADJ 6.2).

Procedure

Inspect the fuser cleaning pad. **The fuser cleaning pad is excessively stained or dirty.**

Y N

If the lines appear at regular 96mm vertical intervals, it is possible that a portion of the photoreceptor has been damaged. Remove the developer assembly and print cartridge. Disengage the print cartridge from the developer assembly. Inspect the photoreceptor for damage. **The surface of the photoreceptor is free from damage or contamination.**

Y N

| Install a new print cartridge.

If the extraneous marks appear at regular 64mm vertical intervals, it is possible that a portion of the magnetic developer roll has been damaged or there may be a build up of excess toner. Rotate the developer gear clockwise and check for damage and distribution of toner. **The magnetic roll is undamaged and toner is distributed evenly across the length of the magnetic roll.**

Y N

| Install a new developer unit.

Remove the fuser assembly (REP 10.1). Clean the fuser roll and pressure roll and inspect for surface damage and contamination. **The fuser roll and pressure roll are free from damage and contamination.**

Y N

| Install a new fuser assembly (REP 10.1).

A B C

A B C

| *NOTE: Paper that has stopped in the fuser rollers must always be removed by pulling the paper toward the transfer area. If the customer removes jams from the exit side of the fuser, unfused toner from the print will be deposited onto the fuser components and will contaminate subsequent prints. Instruct the customer on the correct way to remove jams in the fuser area.*

Increase and then decrease the print density (ADJ 9.4); generate an internal test document for each density setting. **The darkness of the marks changes** (indicating that the high voltage power supply PWBA is operating correctly).

Y N

| Perform the U5 HT FAILURE RAP.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

Install a new fuser cleaning pad.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

IQ 14
Varying Image Quality

Definition

The line darkness and solid area density of the image varies across the print. The variation of solid area density on the test prints should be less than 0.4 (see IQ 1.2, Image Quality Checkout).

Initial Actions

- Check if machine serial number is prior to 1005561 (USO), (XCI) or 2017901 (RX). If yes, and machine location altitude is greater than 1000 metres (3300 ft.), perform altitude adjustment procedure (ADJ 9.6).
- Ensure that the paper weight is 60 gsm to 105 gsm (optimum weight 80 gsm).
- Check the paper for dampness; load fresh paper into the paper tray if necessary.
- If the customer is using special stock (e.g. labels or transparencies) ensure that it is suitable for xerographic purposes.

NOTE: The recommended type of transparency material must be used with this printer to achieve acceptable print quality:

A4	*3R91030*
11" (white lead edge)	*3R2780*
11" (clear)	*3R3117.*

- Remove the developer unit and print cartridge from the printer and disengage the print cartridge from the developer unit.
- Ensure that the printer has the correct toner cartridge installed and that there is adequate toner in the developer unit.
- Gently shake the developer unit from side to side to evenly distribute the toner in the developer unit.
- Clean the paper path (ADJ 8.1).
- Clean or install new transfer/detack corotron wires (ADJ 9.1) and the photoreceptor corotron wire (ADJ 9.3).
- Clean the high voltage terminals and contacts (ADJ 9.1).
- Clean the ROS window (ADJ 6.2).

Procedure

Check that the photoreceptor is grounded properly by checking for continuity between the outboard edge of the photoreceptor and the machine frame. **There is less than 10 ohms of resistance.**

Y N

Inspect the left-hand end of the photoreceptor shaft and the grounding tab for contamination. Ensure that the grounding tab is contacting the photoreceptor shaft. Clean or install new components as necessary.

A

Disengage the print cartridge from the developer assembly. Inspect the photoreceptor for damage. **The surface of the photoreceptor is free from damage or contamination.**

Y N

Install a new print cartridge.

Rotate the developer gear clockwise and check the distribution of toner. **The magnetic roll is undamaged and toner is distributed evenly across the length of the magnetic roll.**

Y N

Install a new developer assembly.

Increase and then decrease the print density (ADJ 9.4); generate an internal test document for each density setting. **The overall density of the prints changes** (indicating that the high voltage power supply PWBA is operating correctly).

Y N

Perform the U5 HT FAILURE RAP.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.

IQ 15
Laser Fault Analysis

Procedure

Warning

Read the laser safety warnings. Do not attempt to work in the ROS area unless the printer power cord has been disconnected.

Generate a 2V test print and a 2H test print (GP 5). If the user interface displays the message "U2 ROS FAILURE" go to the appropriate Status Indicator RAP to rectify the fault.

Examine the test prints to classify the problem. **A small area of image is distorted (i.e. a straight line across process direction appears to have a kink in it).**

Y N

The defect is a thin straight or wavy line in process direction.

Y N

There are random 1 pixel wide lines across the process direction.

Y N

Go to the IQ 1.2 Image Quality Checkout.

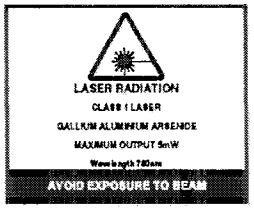
The laser is intermittent. Perform the following in the order given.

- Install a new laser scanner unit (REP 6.1)
- Install a new IOT controller PWBA (REP 3.1).

Check for a hair or other debris in the light path between the laser scanner unit and the photoreceptor.

An electrostatic discharge has distorted the image. This defect may occur randomly in hot, dry environments, especially with high ambient static levelsdue to synthetic carpets.

Go to System Checkout in Section 1. If the problem is not resolved, call for technical assistance.



4. Repair/Adjustment Procedures

Repairs

Title Page

Electrical

Main Drives and Cooling

Imaging

Paper Supply

Repairs

Title Page

Paper Feed and Registration

Xerographics

Print Transportation and Fusing

Repairs

Title Page

Output

Frames and Covers

Adjustments

REP 1.1 Power Supply PWBA

Parts list on PL 4

Removal

1. Switch off the machine on/off switch.

WARNING

Switch off the power supply at the wall outlet and disconnect the power cord from the back of the machine.

2. Remove the tray 2 (if installed).
3. Remove the developer unit and print cartridge. Place the print cartridge in a light-proof bag.
4. Carefully position the machine on its right hand side, using a drop cloth or sheets of paper to protect the finish of the covers.
5. Remove the eight screws securing the base plate.
6. (Figure 1) Remove the power supply PWBA.

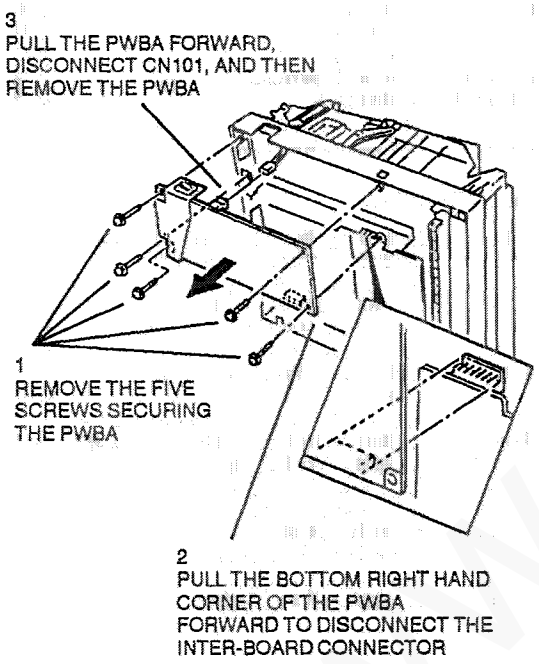


Figure 1. Low voltage power supply PWBA removal

Replacement

WARNING

When replacing the PWBA in the printer, ensure that the plastic interlock arm is located on the opposite side of the interlock switch actuator to the interlock switch. When installed correctly the arm is free to pivot (as the cover is closed) and actuate the interlock switch, without binding or causing the power supply PWBA to bend.

CAUTION

When re-connecting the inter-board connector, great care must be taken to correctly align the pins and receptacles. Failure to align the pins correctly will damage the connectors and cause random fault conditions to appear on the printer.

1. Re-install or replace the power supply PWBA as necessary.
2. The re-installation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

NOTE: If unexpected fault conditions appear on the printer after a PWBA has been removed and reinstalled, it is likely that the PWBA connectors are incorrectly aligned.

REP 1.2 Interlock Switch Actuator

Parts List on PL 5

Removal

1. Remove the power supply PWBA (REP 1.1)
2. (Figure 1) Remove the interlock switch actuator.

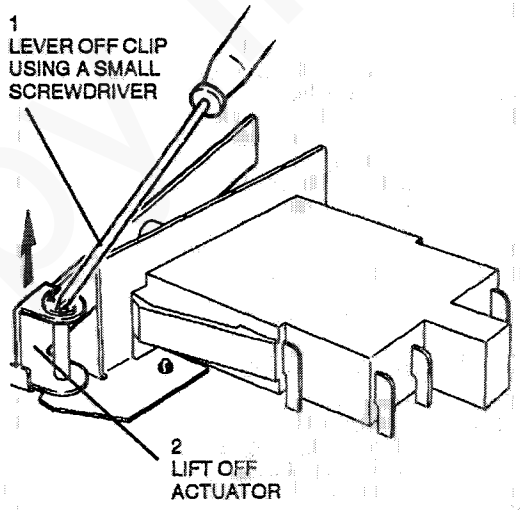


Figure 1. Interlock switch actuator removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 1.3 5A and 2A Fuse

Parts List on PL 5

Removal

1. Remove the power supply PWBA (REP 1.1)
2. (Figure 1) Remove the fuse.

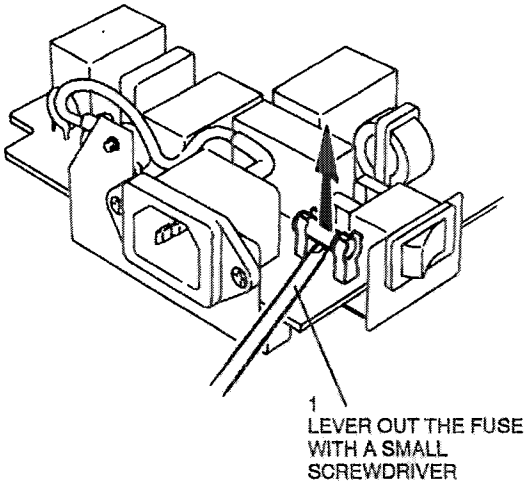


Figure 1. Fuse removal

NOTE: Fuse F101 is shown in figure 1, fuse F102 uses the same procedure and is located in the middle of the PWBA.

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 2.1 User Interface Harness

Parts list on PL 3

Removal

1. Remove the user interface panel (REP 2.2).
2. (Figure 1) Remove the user interface harness.

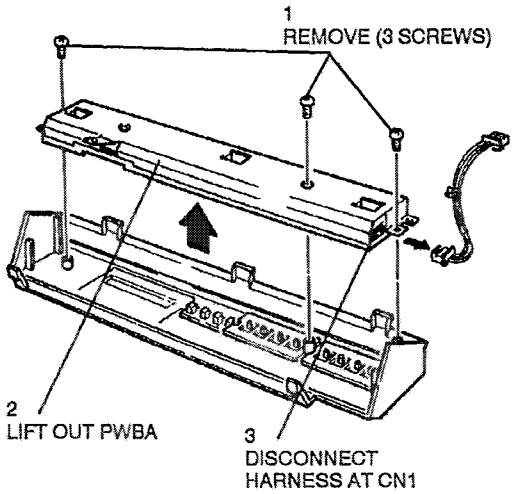


Figure 1. User interface harness removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 2.2 User Interface Panel

Parts list on PL 3

Removal

1. Switch off the machine on/off switch.

WARNING

Switch off the power supply at the wall outlet and disconnect the power cord from the back of the machine.

2. Remove the developer unit and print cartridge. Place the print cartridge in a light-proof bag.
3. (Figure 1) Remove the user interface panel.

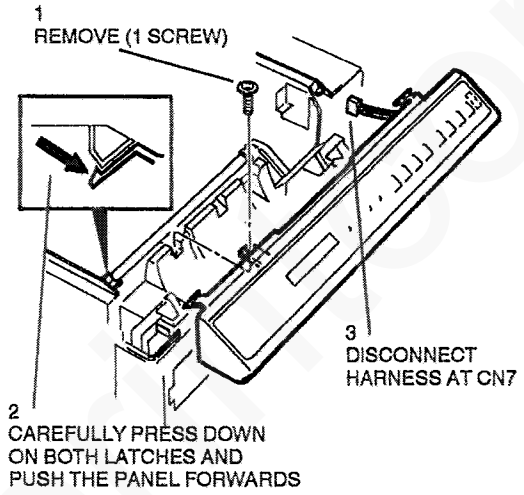


Figure 1. User interface panel removal

Replacement

1. Reinstall or replace the user interface panel as necessary.
2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

REP 2.3 Panel Key Top

Parts list on PL 7

Removal

1. Remove the user interface panel (REP 2.2).
2. (Figure 1) Remove the panel key top.

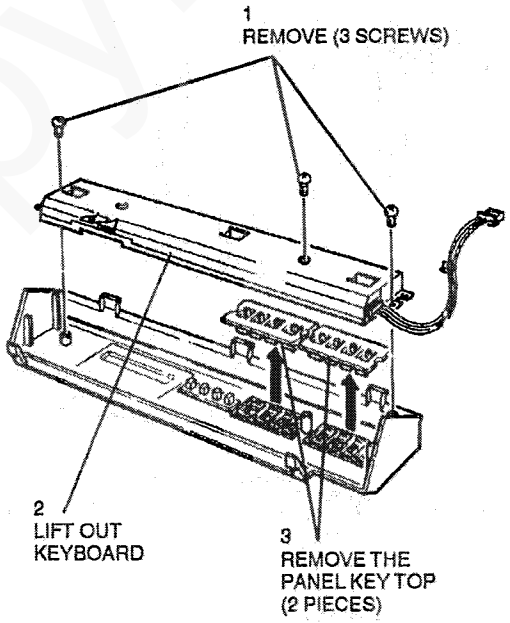


Figure 1. Panel key top removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 3.1 IOT Controller PWBA

Parts list on PL 4

Removal

1. Remove the right side cover (REP 14.3).
2. (Figure 1) Remove the print counter.

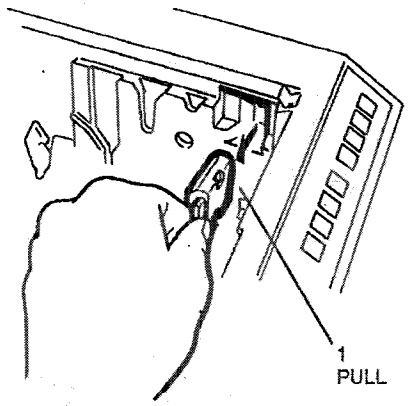


Figure 1. Print Counter removal

3. (Figure 2) Remove the IOT controller PWBA.

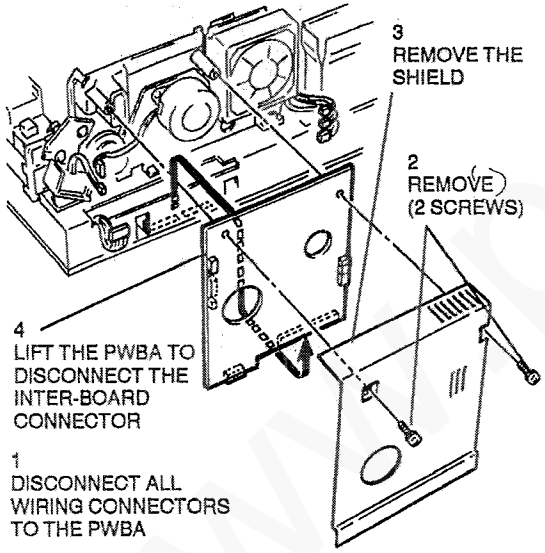


Figure 2. IOT controller PWBA removal

Replacement

1. Re-install or replace the IOT controller PWBA as necessary.

CAUTION

When re-connecting the inter-board connectors, great care must be taken to correctly align the pins and receptacles. Failure to align the pins correctly will damage the connectors and cause random fault conditions to appear on the printer.

CAUTION

When re-connecting the wiring connectors ensure that their positions conform to the following list:

- CN5 - Cassette feed solenoid.
- CN6 - Developer unit terminal assembly.
- CN7 - User interface.
- CN8 - Input paper switch.
- CN10 - Drive motor.
- CN11 - Laser scanner unit harness.
- CN12 - Fuser cover assembly.
- CN13 - Paper output switch.
- CN14 - Fan assembly.

2. The re-installation/replacement procedure is the reverse of the removal procedure.

NOTE: Ensure that the laser scanner unit harness is correctly located in the recess in the top of the fan assembly, and that the ferrite is located beneath the IOT controller shield.

3. Perform the J6 Service Required RAP
4. Check/adjust ADJ 6.1 Vertical and Horizontal Alignment.

NOTE: If unexpected fault conditions appear on the printer after this PWBA has been removed and reinstalled, it is likely that the PWBA connectors are incorrectly aligned.

REP 3.2 ESS Guide Rail

Parts list on PL 13

Removal

1. Remove the right side cover (REP 14.3).
2. Remove the ESS controller PWBA (REP 3.3).
3. Remove paper tray 2 (if fitted).
4. Carefully position the machine on its right hand side, using a drop sheet or sheets of paper to protect the finish of the covers.
5. Remove the eight screws securing the base plate.
6. (Figure 1) Remove the ESS Guide Rail.

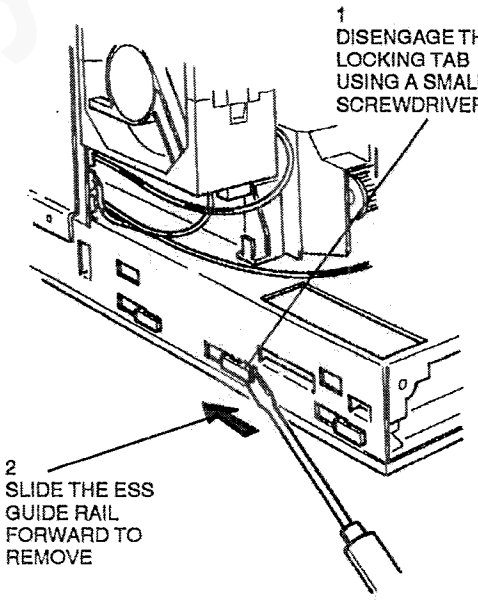


Figure 1. ESS Guide rail removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 3.3 ESS Controller PWBA

Parts list on PL 4

Removal

1. Switch off the machine on/off switch.

WARNING

Switch off the power supply at the wall outlet and disconnct the power cord from the back of the machine.

2. Disconnect the communications cable from the back panel of the ESS controller PWBA.
3. Remove any emulation or font cartidge (if fitted).
4. (Figure 1) Remove the ESS controller PWBA.

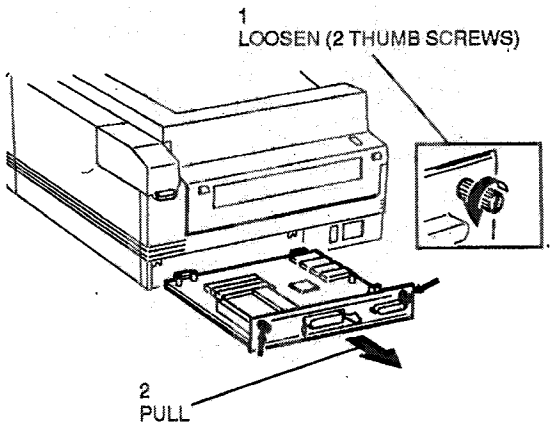


Figure 1. ESS controller PWBA removal

Replacement

1. Reinstall or replace the ESS controller PWBA as necessary.
2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

REP 3.4 Serial Communication PWBA

Parts list on PL 6

Removal

1. Remove the ESS controller PWBA (REP 3.3).
2. (Figure1) Remove the serial communication PWBA.

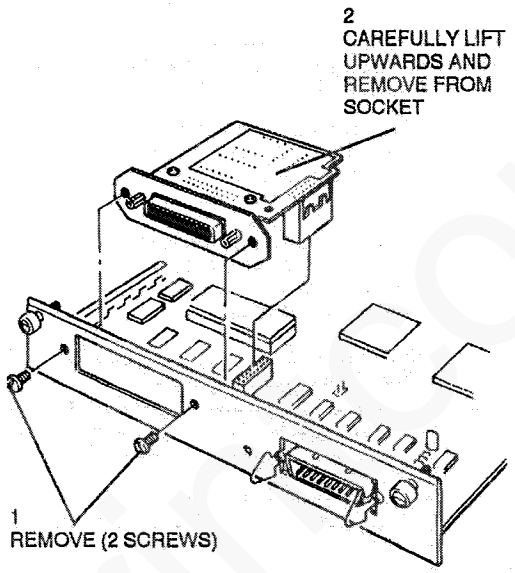


Figure 1. Serial communication PWBA removal

Replacement

1. Reinstall or replace the serial communication PWBA as necessary.
2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

REP 3.5 1MByte SIMM PWBA

Parts list on PL 6

Removal

1. Remove the ESS controller PWBA (REP 3.3).
2. (Figure1) Remove the 1MByte SIMM PWBA.

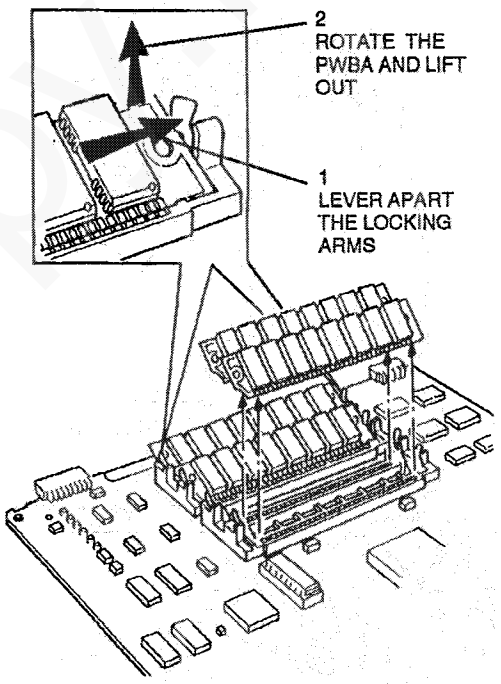


Figure 1. 1MByte SIMM PWBA removal

Replacement

1. Reinstall or replace the 1MByte SIMM PWBA as necessary.
2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

REP 3.6 PCL ROM 1

Parts list on PL 6

Removal

1. Remove the ESS controller PWBA REP 3.3.
2. If installed, remove the serial communications PWBA REP 3.4.

CAUTION

Observe the ESD precautions.

3. (Figure1) Remove the PCL ROM 1.

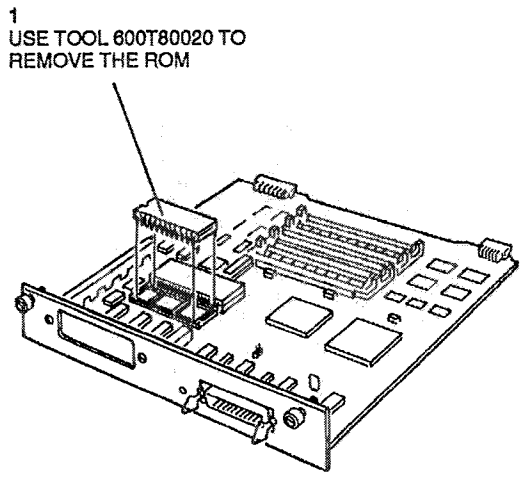


Figure 1. PCL ROM 1 removal

Replacement

1. Reinstall or replace the PCL ROM 1 as necessary.

CAUTION

Ensure that all of the legs of the ROM are straight and that the alignment mark on the RAM aligns with the alignment mark printed on the PWBA; note that there should be two spare connectors on the IC socket, at the notch end of ROM 1.

2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

REP 3.7 Emulations ROM 2

Parts list on PL 6

Removal

1. Remove the ESS controller PWBA REP 3.3.

CAUTION

Observe the ESD precautions.

2. (Figure1) Remove the emulations ROM 2.

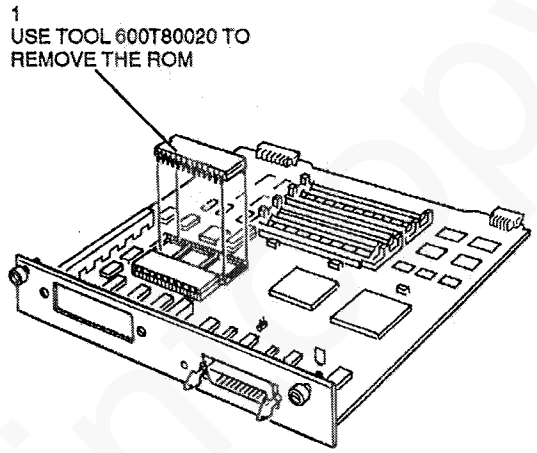


Figure 1. Emulations ROM 2 removal

Replacement

1. Reinstall or replace the emulations ROM 2 as necessary.

CAUTION

Ensure that all of the legs of the ROM are straight and that the alignment mark on the RAM aligns with the alignment mark printed on the PWBA; note that there should be eight spare connectors on the IC socket, at the notch end of ROM 2.

2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

REP 4.1 Drive Motor

Parts list on PL 10

Removal

1. Remove the IOT controller PWBA (REP 3.1).
2. (Figure 1) Remove the drive motor.

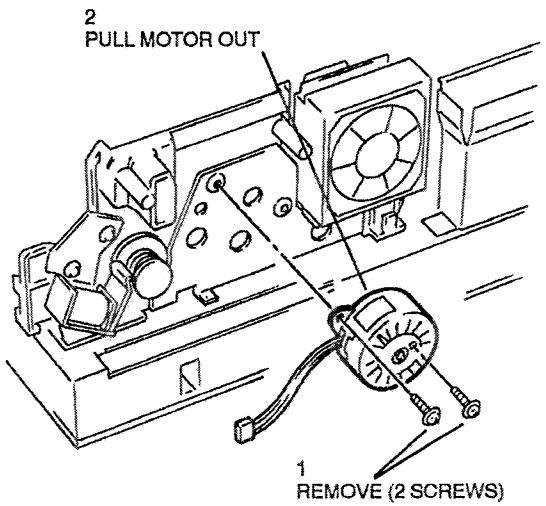


Figure 1. Drive motor removal

Replacement

NOTE: Ensure that the drive motor is positioned so that the wiring exits the motor at the upper screw location.

1. The reinstallation/replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 4.2 Fan Assembly

Parts list on PL 10

Removal

1. Remove the right side cover (REP 14.3).
2. Disconnect CN14 on the IOT controller PWBA.
3. (Figure 1.) Remove the fan assembly.

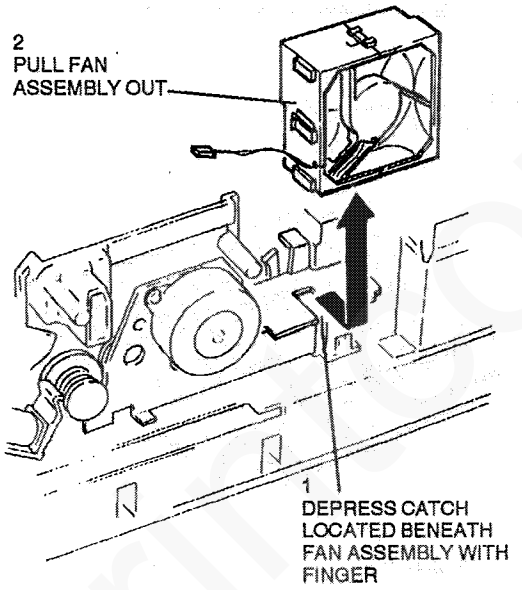


Figure 1. Fan assembly removal

Replacement

1. The reinstallation/replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 4.3 Right Side Frame Assembly

Parts list on PL 10

Removal

1. Remove the drive motor (REP 14.3).
2. Remove the fan assembly (REP 3.1).
3. Remove the cassette feed roller unit (REP 7.2).
4. Remove the pinch roller assembly (REP 8.2).
5. Remove the paper feed roller assembly (REP 8.3).
6. (Figure 1) Remove the right side frame assembly.

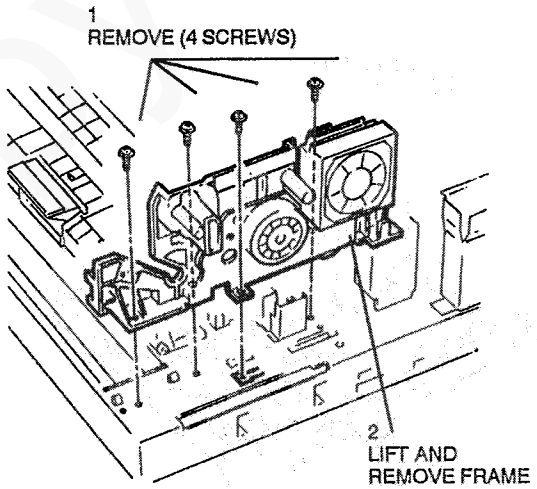


Figure 1. Right side frame assembly removal

Replacement

1. If the right side frame assembly is replaced, perform the appropriate lubrication procedure (ADJ 4.1).
2. The reinstallation/replacement procedure is the reverse of the removal procedure.

NOTE: Ensure that the alignment lugs protruding from the base of the right side frame assembly locate in the holes of the base plate.

3. Go to System Checkout in Section 1.

REP 4.4 Ozone Filter A

Parts list on PL 8

Removal

1. (Figure 1) Remove ozone filter A.

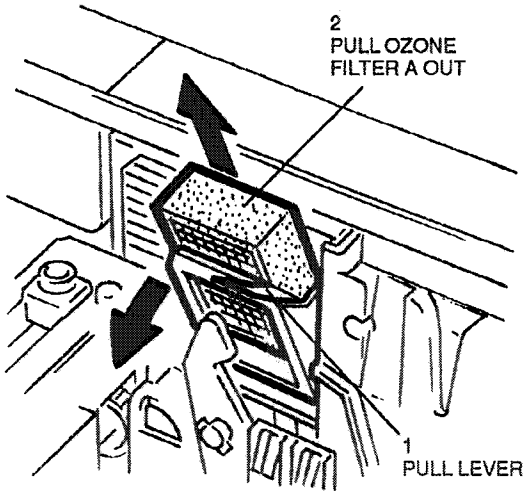


Figure 1. Ozone filter A removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.

REP 4.5 Ozone Filter B

Parts list on PL 8

Removal

1. Remove the right side cover REP 14.3.
2. Disconnect CN14 on the IOT controller PWBA
3. (Figure 1) Remove ozone filter B.

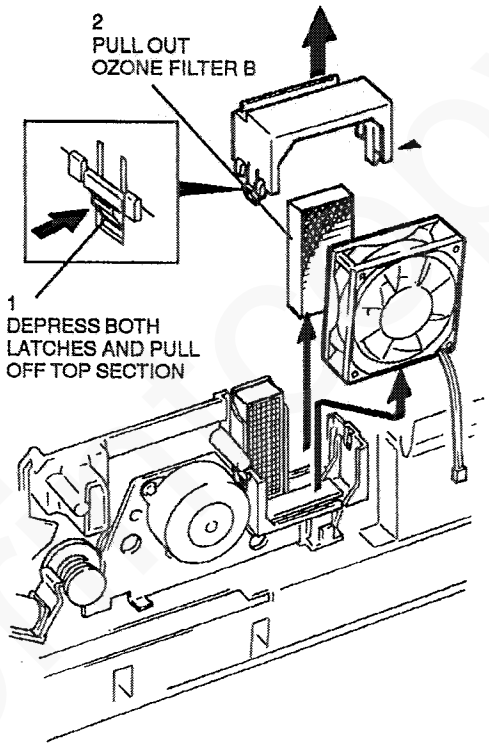


Figure 1. Ozone filter B removal

Replacement

1. The reinstallation/replacement procedure is the reverse of the removal procedure.

REP 6.1 Laser Scanner Unit

Parts list on PL 13

Removal

1. Switch off the machine on/off switch.

WARNING

Switch off the power supply at the wall outlet and disconnct the power cord from the back of the machine.

2. Remove the developer unit and print cartridge. Place the print cartridge in a light-proof bag.
3. (Figure 1) Remove the laser scanner unit.

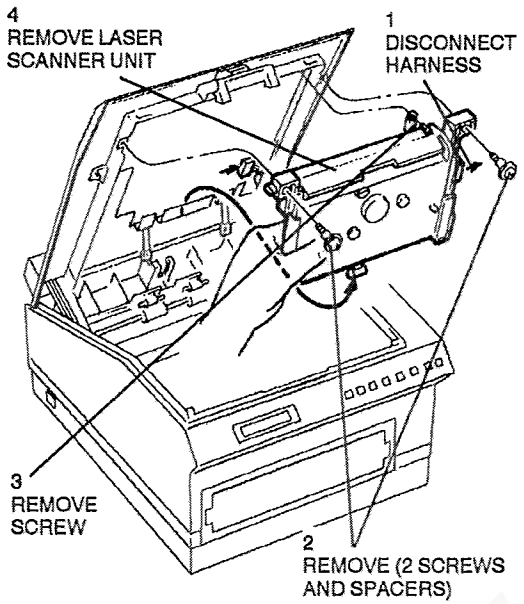


Figure 1. Laser scanner unit removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.

Note: Ensure that the ROS grounding wire is replaced under the top right cover screw.

2. Go to System Checkout in Section 1.

REP 6.2 Laser Scanner Unit Harness

Parts list on PL 13

Removal

1. Remove the Right Side Cover (REP 14.3).
2. Disconnect both ends of the Laser Scanner Unit Harness and remove it from the machine.

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.
3. Check/adjust ADJ 6.1 Vertical and Horizontal Alignment.

REP 7.1 Friction Pad

Parts list on PL 9

Removal

1. Remove the cassette feed roller unit (REP 7.3).
2. (Figure 1) Remove the friction pad.

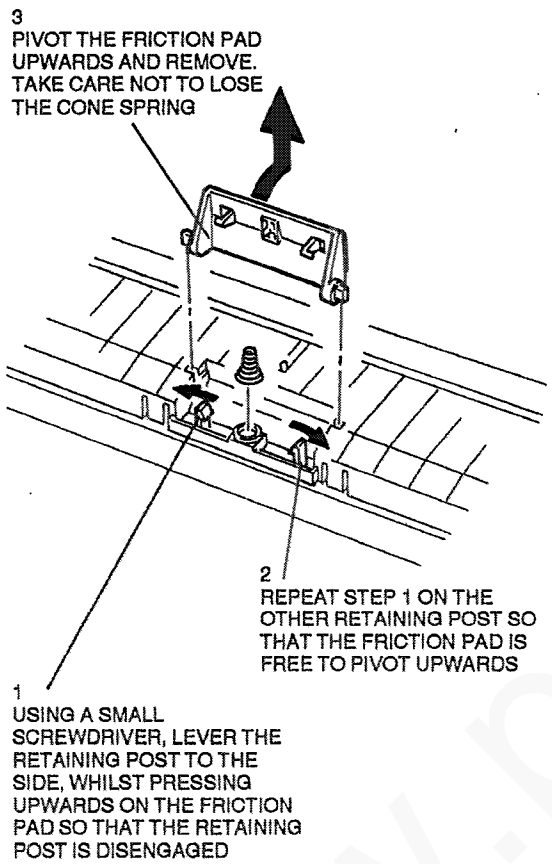


Figure 1. Friction pad removal

Replacement

1. The reinstallation/replacement procedure is the reverse of the removal procedure
2. Go to System Checkout in Section 1.

REP 7.2 Cassette Feed Solenoid

Parts list on PL 10

Removal

1. Remove the IOT controller PWBA (REP 3.1).
2. (Figure 1) Remove the cassette feed solenoid.

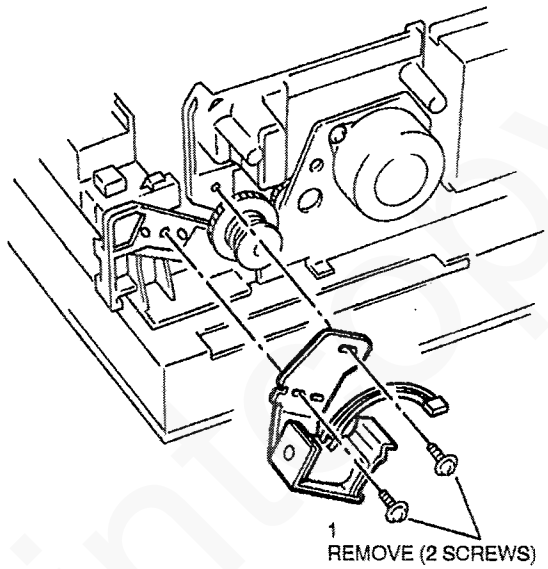


Figure 1. Cassette feed solenoid removal

Replacement

1. The reinstallation/replacement procedure is the reverse of the removal procedure
2. Check/adjust ADJ 7.1 cassette feed solenoid.
3. Go to System Checkout in Section 1.

REP 7.3 Cassette Feed Roller Unit

Parts list on PL 10

Removal

1. Remove the input paper switch (REP 7.4).
2. (Figure 1) Remove the cassette feed roller unit.

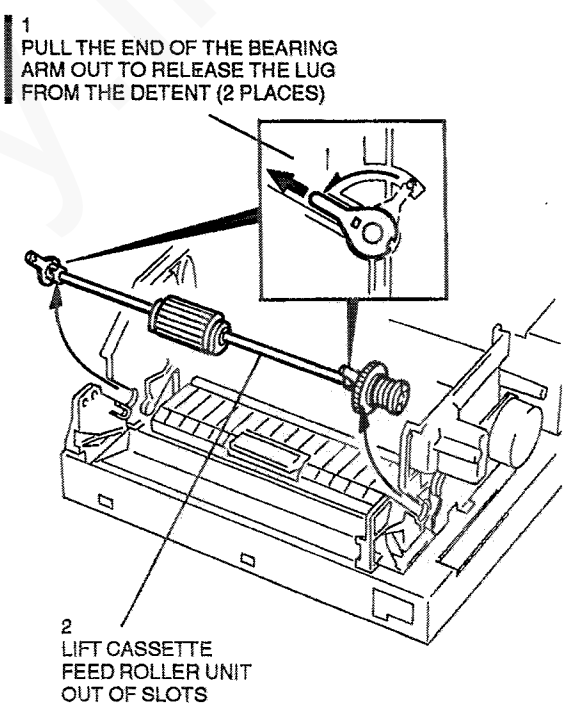


Figure 1. Cassette feed roller unit removal

Replacement

1. The reinstallation/replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 7.4 Input Paper Switch Assy.

Parts list on PL 12

Removal

1. Remove the Right Side Cover (REP 14.3).
2. Remove the Left Side Cover (REP 14.2).
3. Remove the front frame assembly (REP 14.12).
4. (Figure 1) Remove the input paper switch.

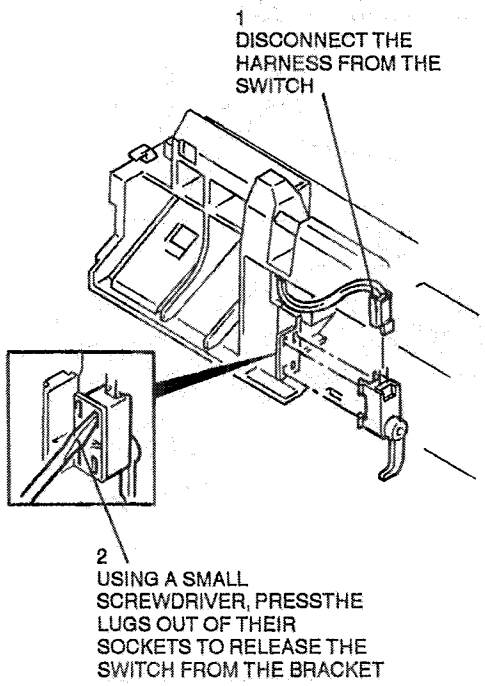


Figure 1. Input paper switch removal

Replacement

1. The reinstallation/replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 8.1 Timing Sensor.

Parts List On PL 9

Removal

1. Remove the high voltage power supply PWBA (REP 9.4).
2. (Figure 1) Remove the timing sensor.

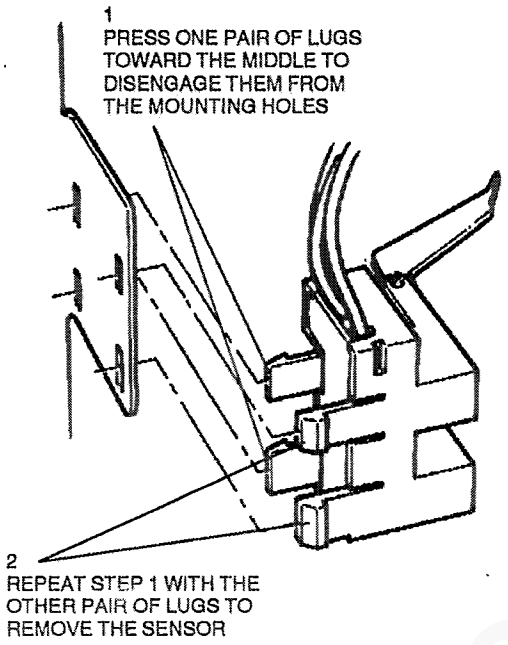


Figure 1. Timing Sensor removal

Replacement

1. Use a pair of pliers to help insert the new sensor into the mounting holes

CAUTION

The sensor can be easily damaged with the pliers, DO NOT use too much force.

2. The replacement procedure is the reverse of the removal procedure

REP 8.2 Pinch Roller Assembly

Parts List On PL 10

Removal

1. Switch off the machine on/off switch.

WARNING

Switch off the power supply at the wall outlet and disconnect the Power Cord from the back of the machine.

2. Remove the developer unit and print cartridge. Place the print cartridge in a light-proof bag.
3. Unhook both pinch roller assembly springs.
4. (Figure 1) Remove the pinch roller assembly.

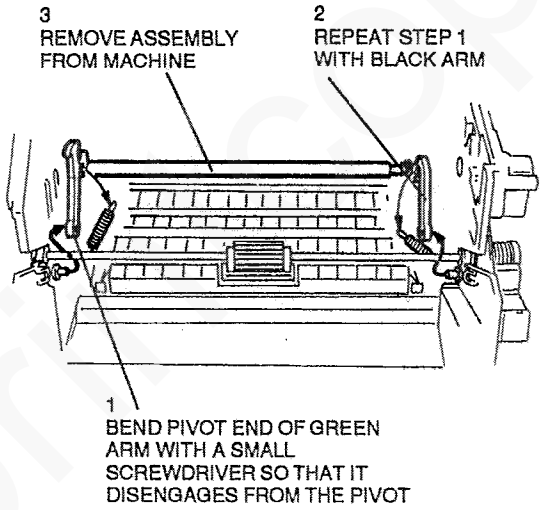


Figure 1. Pinch Roller Assembly removal

Replacement

1. Reinstall or replace the pinch roller assembly as necessary.
2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

REP 8.3 Paper Feed Roller Assembly

Parts List On PL 10

Removal

1. Remove the left side cover (REP 14.2).
2. Remove the pinch roller assembly springs.
3. (Figure 1) Remove the paper feed roller assembly.

Replacement

1. Reinstall or replace the paper feed roller assembly as necessary.
2. Apply Conductive Grease to the left hand end of the paper feed roller shaft. Perform the ground continuity adjustment (ADJ 10.3).
3. The re-installation/replacement procedure is the reverse of the removal procedure.
4. Go to System Checkout in Section 1.

REP 8.4 Left Pinch Roller Arm

Parts List On PL 10

Removal

1. Remove the pinch roller assembly REP 8.2
2. Remove the left pinch roller arm from the shaft.

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.
3. Check/adjust ADJ 6.1 Vertical and Horizontal Alignment.

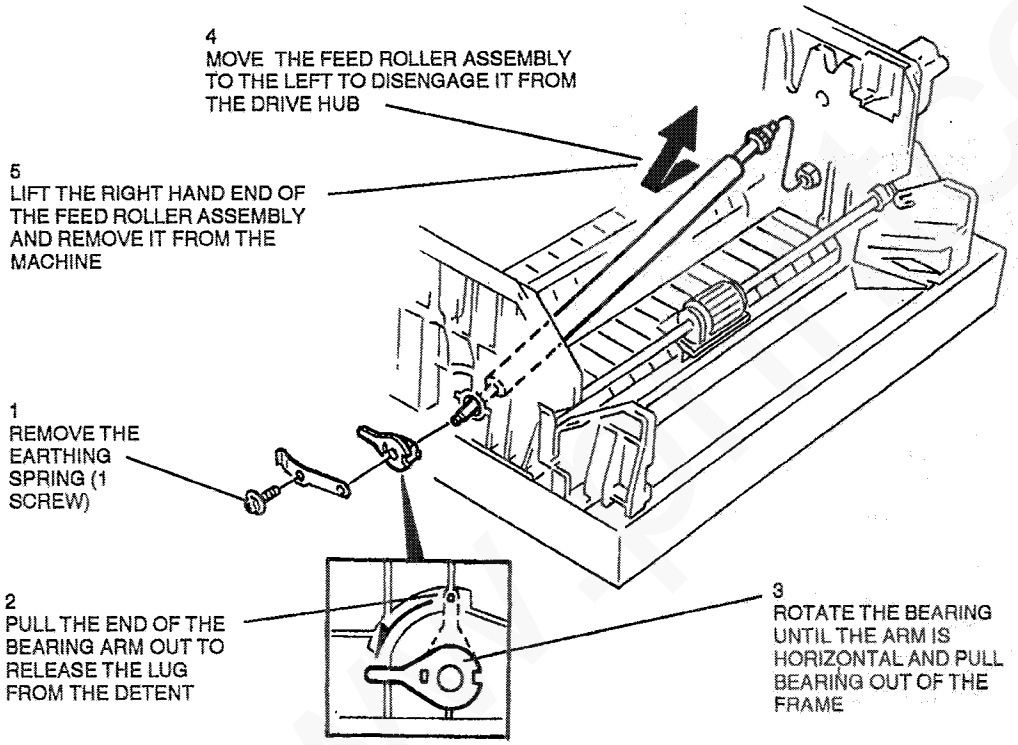


Figure 1. Paper feed roller assembly removal

REP 8.5 Right Pinch Roller Arm

Parts List On PL 10

Removal

1. Remove the pinch roller assembly (REP 8.2).
2. Remove the right pinch roller arm from the shaft.

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 8.6 Pinch Roller Gear

Parts List On PL 10

Removal

1. Remove the pinch roller assembly (REP 8.2).
2. Remove the pinch roller gear from the shaft.

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 8.7 Front Paper Guide Assembly

Parts List On PL 9

Removal

1. Remove the cassette feed roller unit (REP 7.1).
2. (Figure 1) Remove the front paper guide assembly.

CAUTION

When disengaging the latching legs of the front paper guide assembly, use the minimum amount of force necessary to prevent breakage of the fine plastic components.

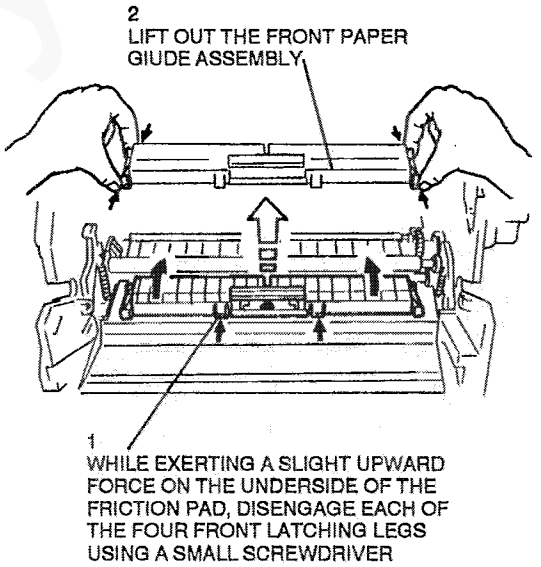


Figure 1. Front paper guide assembly removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 9.1 Corotron Assembly

Parts list on PL 9

Removal

1. Switch off the machine on/off switch.

WARNING

Switch off the power supply at the wall outlet and disconnect the Power Cord from the back of the machine.

2. Remove the developer unit and print cartridge. Place the print cartridge in a light-proof bag.
3. (Figure 1) Remove the corotron assembly.

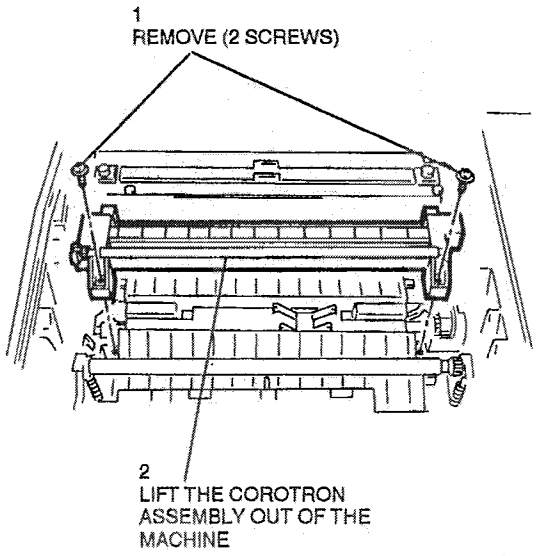


Figure 1. Corotron assembly removal

Replacement

1. Reinstall or replace the corotron assembly as necessary.
2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

REP 9.2 Left High Voltage Connector Assembly

Part List on PL 9

Removal

1. Remove the lower paper guide (REP 10.5).
2. Loosen by six turns, the three screws securing the left side frame.
3. (Figure 1) Remove the left high voltage connector assembly.

CAUTION

When disengaging the latching legs of the left high voltage connector assembly, use the minimum amount of force necessary to prevent breakage of the fine plastic components.

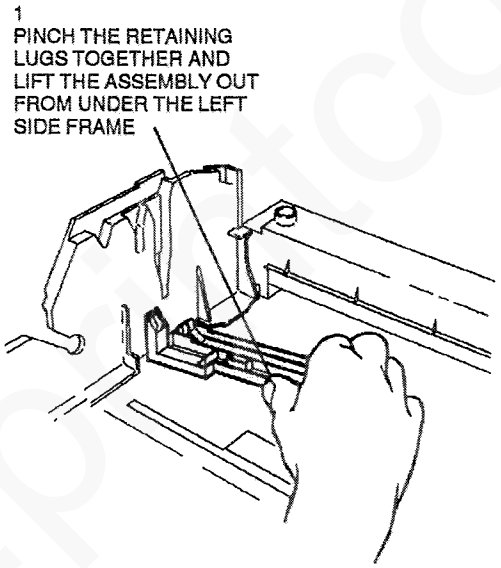


Figure 1. Left high voltage connector assembly removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 9.3 Right High Voltage Connector Assembly

Part List on PL 9

Removal

1. Remove the Lower Paper Guide (REP 10.5).
2. Loosen by four turns, the three screws securing the right side frame.
3. Figure 1) Remove the right high voltage connector assembly.

CAUTION

When disengaging the latching legs of the Right High Voltage Connector Assembly, use the minimum amount of force necessary to prevent breakage of the fine plastic components.

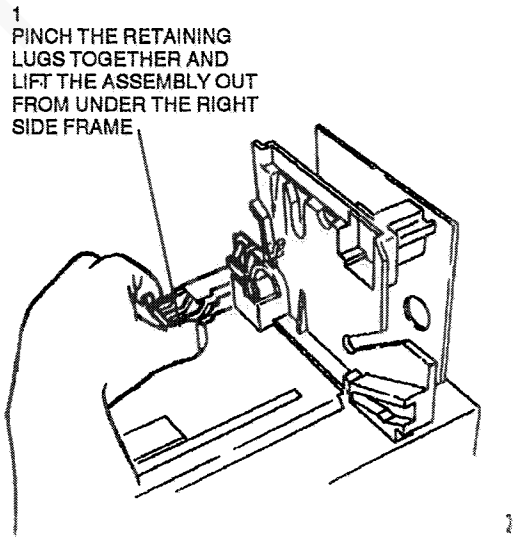


Figure 1. Right high voltage connector assembly removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 9.4 High Voltage Power Supply PWBA

Parts List on PL 4

Removal

1. Remove the ESS controller PWBA (REP 3.3).
2. Remove the low voltage power supply PWBA (REP 1.1).
3. Disconnect the lead from the timing sensor at CN7 on the high voltage power supply PWBA.
4. (Figure 1) Remove the high voltage power supply PWBA.

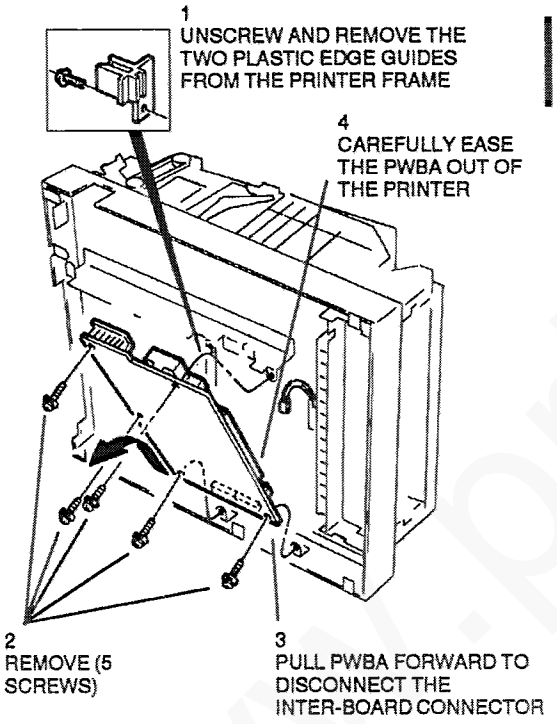


Figure 1. High voltage PWBA removal

Replacement

CAUTION

When re-connecting the inter-board connectors, great care must be taken to correctly align the pins and receptacles. Failure to align the pins correctly will damage the connectors and cause random fault conditions to appear on the printer.

1. Reinstall or replace the high voltage power supply PWBA as necessary.
2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

NOTE: If unexpected fault conditions appear on the printer after this procedure, it is likely that the PWBA has been incorrectly reinstalled.

NOTE: If TAG 125 is marked off on the TAG MATRIX label and the machine is still located 1000 metres (3300 ft) above sea level then ADJ 9.6 (Altitude Adjustment procedure) must be carried out on the new HVPS PWBA.

REP 9.5 Developer Unit Terminal Assembly

Parts List on PL 12

Removal

1. Remove the input paper switch assembly (REP 7.4).
2. (Figure 1) Remove the terminal retainer.

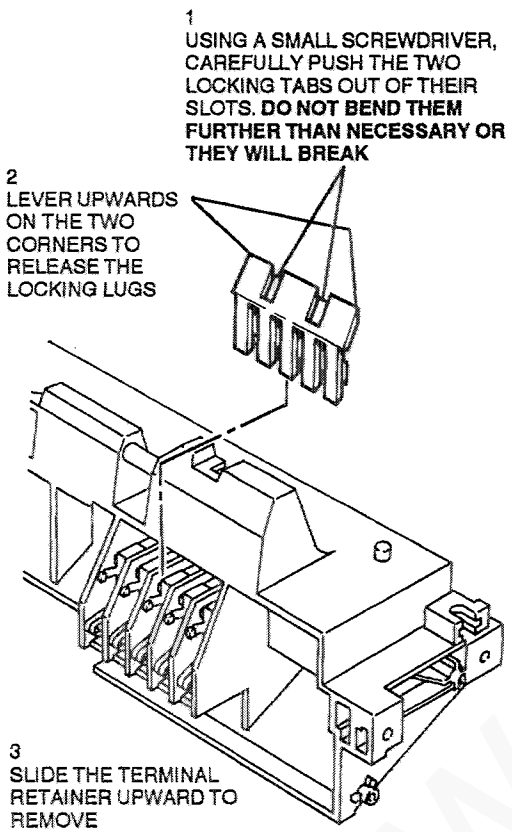


Figure 1. Terminal retainer removal

3. (Figure 2) Remove the developer unit terminal assembly.

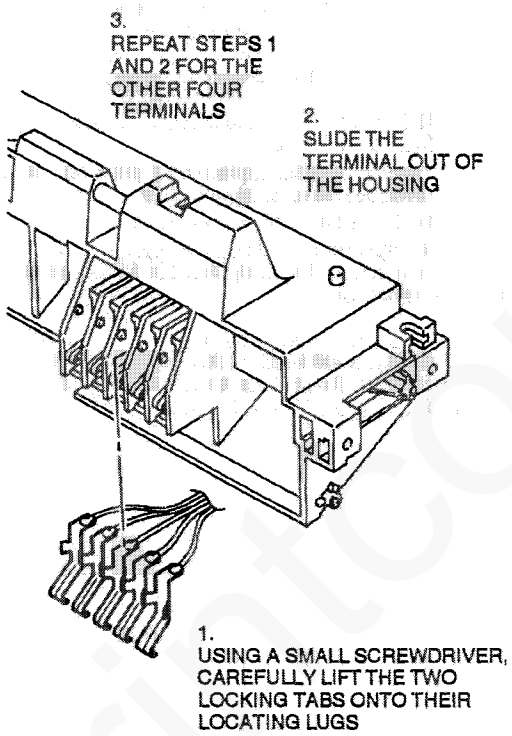


Figure 2. Developer unit terminal removal

Replacement

1. Replace the developer unit terminals as necessary. The replacement procedure is the reverse of the removal procedure.

NOTE: Ensure that the wire colours conform to the following :

LEFT				*RIGHT*
red	*brown*	*green*	*yellow*	*orange*

2. Go to System Checkout in Section 1.

REP 9.6 Toner Motor Belt

Parts list on PL 2

Removal

1. Switch off the macine on/off switch and remove the power cord.
2. Remove the developer unit and print cartridge from the machine. Place the print cartridge in a lightproof bag.

CAUTION

The developer drive cover is retained by three small plastic lugs that need to be gently disengaged before the cover can be removed. Do not use excessive force when removing and replacing the cover, or the lugs will break.

Do not touch the magnet roller, or the image quality of the printer will be degraded.

3. (Figure 1) Remove the toner motor belt.

Replacement

1. Reinstall or replace the toner drive belt. The replacement procedure is the reverse of the removal procedure.
2. Lubricate the developer unit drive gears (ADJ 9.5).
3. Go to System Checkout in Section 1.

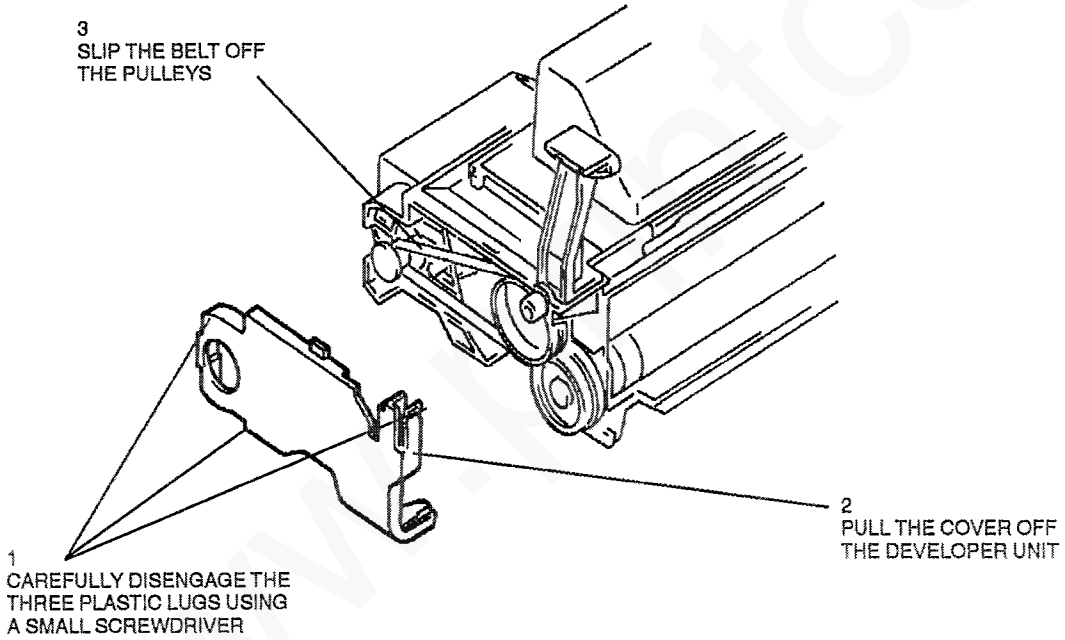


Figure 1. Toner motor belt removal

REP 9.7 Toner Motor Assembly

Parts list on PL 2

NOTE: The toner motor assembly consists of the toner motor, the toner sensor, the print cartridge terminals and associated wiring.

Removal

CAUTION

Do not touch the magnet roller, or the image quality of the printer will be degraded.

Take care not to spill excess toner from the toner sensor onto either the print cartridge or the worksurface.

1. Remove the toner motor belt (REP 9.6).
2. Place the print cartridge on the work surface so that the toner sensor and toner motor are uppermost.
3. (Figure 1) Remove the toner motor assembly

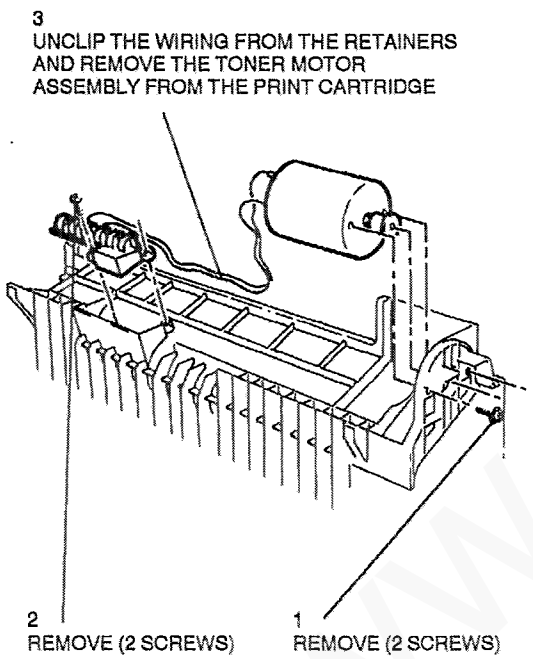


Figure 1. Toner motor assembly removal

Replacement

1. Reinstall or replace the toner motor assembly. The replacement procedure is the reverse of the removal procedure.
2. Clean the print cartridge before reinstalling it in the printer.
3. Perform (ADJ 9.5) lubricating developer unit drive gears.
4. Go to System Checkout in Section 1.

REP 9.8 Print Cartridge Lever & Spring

Parts list on PL 11

NOTE: There are two print cartridge levers and springs, one lever and spring on the left side printer frame and one lever and spring on the right side printer frame.

Removal

1. Switch off the machine on/off switch and remove the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. Remove the lower paper guide (REP 10.5).
4. Remove the fuser assembly (REP 10.1).
5. (Figure 1) Remove the left print cartridge lever and spring.

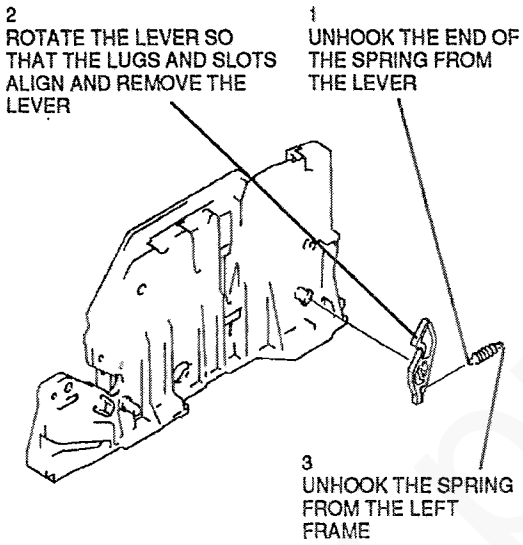


Figure 1. Left print cartridge lever and spring removal

6. (Figure 2) Remove the right print cartride lever and spring.

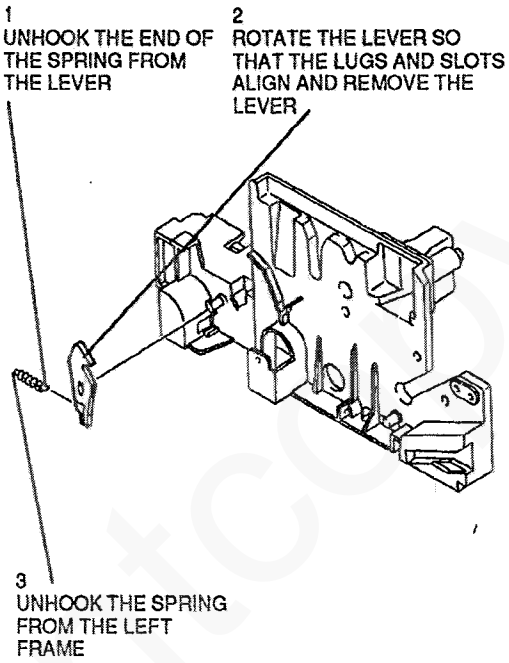


Figure 2. Right print cartridge lever and spring removal

Replacement

1. Reinstall or replace the print cartridge levers and springs. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 10.1 Fuser Assembly

Parts List on PL 9

Removal

WARNING

The fuser assembly operates at temperatures of 160 to 180 degrees Celsius. Switch off at the machine on/off switch and remove the power cord, allow the fuser to cool for at least 15 minutes before starting this procedure.

The fuser cleaning pad is impregnated with silicone oil. Avoid touching the surface of the cleaning pad. Do not allow silicone oil to come into contact with the eyes or sensitive parts of the body.

1. Remove the top cover (REP 14.1).
2. Remove the left side cover (REP 14.2).
3. Remove the right side cover (REP 14.3).
4. Remove the fuser cleaning pad from the fuser assembly.
5. Disconnect the connectors from CN12 and CN13 on the IOT controller PWBA.
6. Disconnect the connector from CN101 on the power supply PWBA.
7. (Figure 1) Remove the fuser assembly.

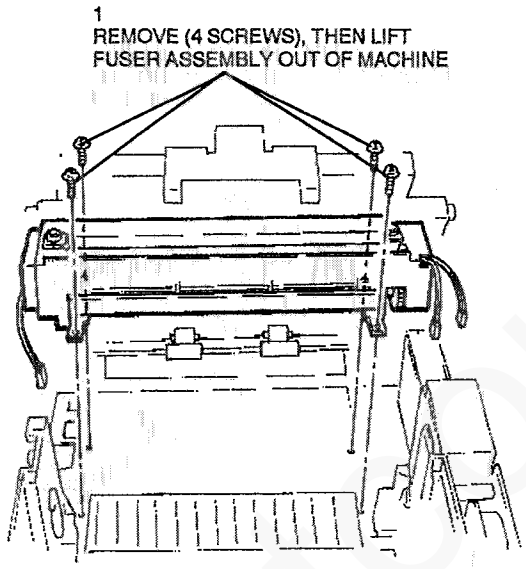


Figure 1. Fuser assembly removal

Replacement

1. Reinstall or replace the fuser assembly as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 10.2 Paper Output Switch

Parts List on PL 9

Removal

WARNING

The fuser assembly operates at temperatures of 160 to 180 degrees Celsius. Switch off at the machine on/off switch and remove the power cord, allow the fuser to cool for at least 15 minutes before starting this procedure.

The fuser cleaning pad is impregnated with silicone oil. Avoid touching the surface of the cleaning pad. Do not allow silicone oil to come into contact with the eyes or sensitive parts of the body.

CAUTION

Do not use excessive force when releasing the plastic lugs that secure the paper output switch and mounting bracket, otherwise the lugs will break.

1. Remove the fuser assembly (REP 10.1).
2. (Figure 1)Remove the paper output switch and mounting bracket.

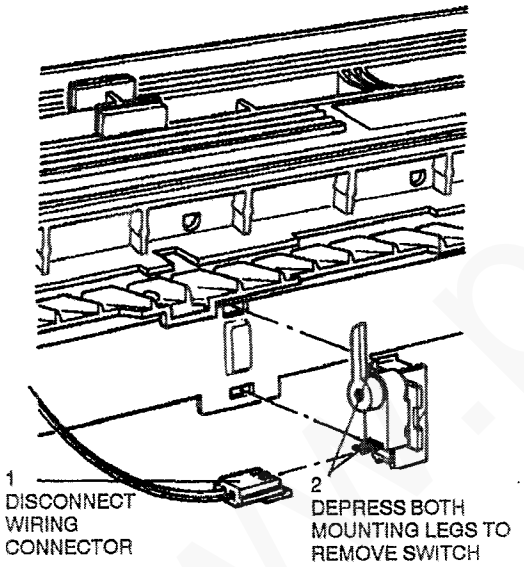


Figure 1. Paper output switch and bracket removal

3. (Figure 2) Remove the paper output switch.

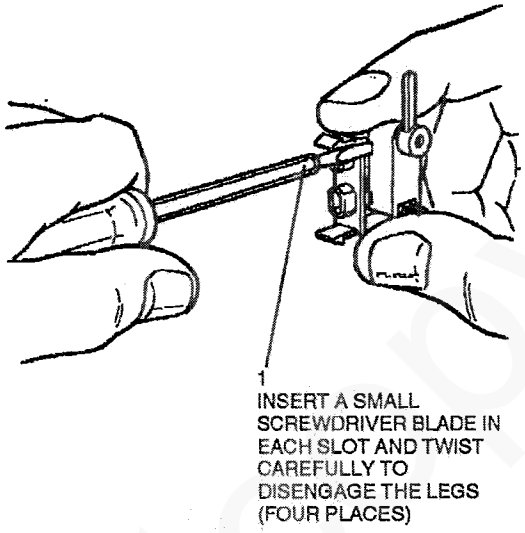


Figure 2. Paper output switch removal

Replacement

1. Reinstall or replace the paper output switch as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 10.3 Fuser Cover Assembly

Parts List on PL 9

Removal

WARNING

The fuser assembly operates at temperatures of 160 to 180 degrees Celsius. Switch off at the machine on/off switch and remove the power cord, allow the fuser to cool for at least 15 minutes before starting this procedure.

The fuser cleaning pad is impregnated with silicone oil. Avoid touching the surface of the cleaning pad. Do not allow silicone oil to come into contact with the eyes or sensitive parts of the body.

CAUTION

Do not touch the surface of the fuser rod, as this will reduce the efficiency and life of the fuser rod.

1. Remove the fuser assembly (REP 10.1).
2. (Figure 1) Remove the fuser rod retaining clip.

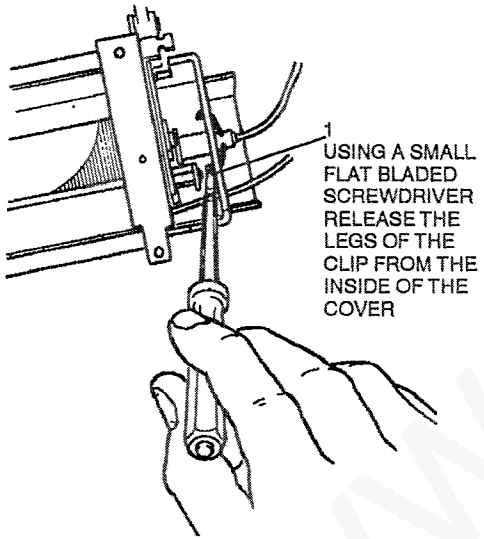


Figure 1. Fuser rod retaining clip removal

3. Remove the two screws securing the cover to the fuser and remove the fuser cover assembly (including the fuser heater rod) from the fuser.

Replacement

1. Reinstall the fuser roll and pressure roll assembly into the fuser cover; reinstall the two securing screws.
2. (Figure 2) Carefully locate the end of the fuser heater rod on the sprung terminal in the fuser cover; reinstall the sprung metal fuser rod securing clip.

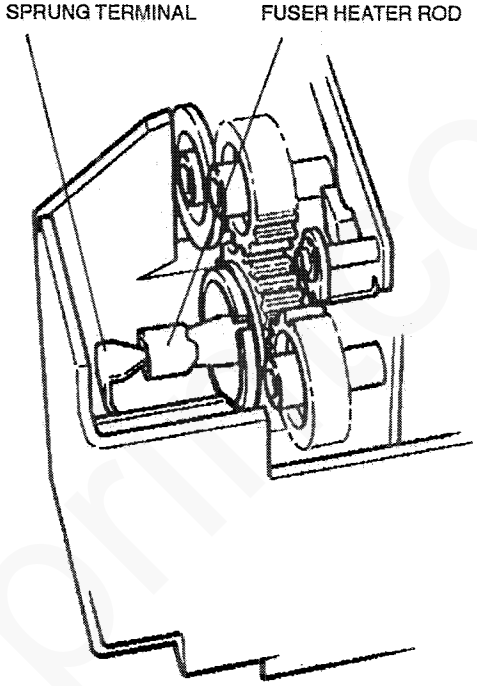


Figure 2. Fuser heater rod location

3. Re-install the fuser assembly in the printer. The replacement procedure is the reverse of the removal procedure described in REP 10.1.
4. Go to System Checkout in Section 1.

REP 10.4 Fuser Rod

Parts List on PL 9

Removal

WARNING

The fuser assembly operates at temperatures of 160 to 180 degrees Celsius. Switch off at the machine on/off switch and remove the power cord, allow the fuser to cool for at least 15 minutes before starting this procedure.

The fuser cleaning pad is impregnated with silicone oil. Avoid touching the surface of the cleaning pad. Do not allow silicone oil to come into contact with the eyes or sensitive parts of the body.

CAUTION

Do not touch the surface of the fuser rod, as this will reduce the efficiency and life of the fuser rod.

1. Remove the fuser assemby (REP 10.1).
2. Remove the fuser cover assembly (REP 10.3).
3. (Figure 1) Remove the fuser rod.

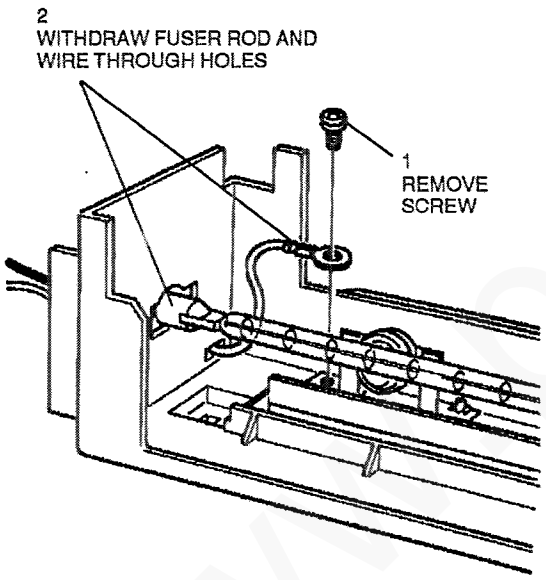


Figure 1. Fuser rod removal

Replacement

1. Reinstall or replace the fuser rod through the fuser cover
2. Connect the fuser rod cable to the terminal in the fuser cover (Figure 1).
3. Reinstall the fuser roll and pressure roll assembly into the fuser cover. The replacement procedure is the reverse of the removal procedure described in REP 10.3.
4. Reinstall the fuser assembly in the printer. The replacement procedure is the reverse of the removal procedure described in REP 10.1.
5. Go to System Checkout in Section 1.

REP 10.5 Lower Paper Guide

Parts List on PL 9

Removal

1. Switch off the machine on/off switch and disconnect the power cord.
2. Remove the developer unit and print cartridge. Place the print cartridge in a lightproof bag.
3. Remove the cassette feed roller unit (REP 7.3).
4. Remove the paper feed roller assembly (REP 8.3).
5. Remove the corotron assembly (REP 9.1).
6. Remove the front paper guide assembly (REP 8.7).

CAUTION

Do not use excessive force when releasing the plastic lugs that secure the lower paper guide, otherwise the lugs will break.

7. (Figure 1) Remove the lower paper guide.

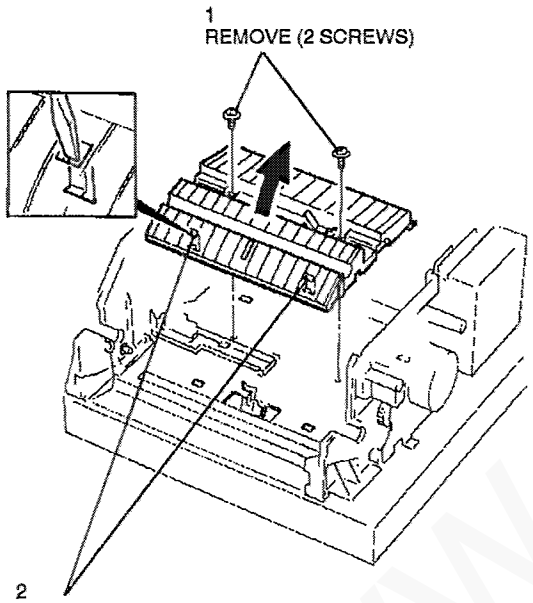


Figure 1. Lower paper guide removal

Replacement

CAUTION

Ensure that the timing sensor lever is correctly aligned with the corresponding slot in the lower paper guide during replacement.

1. Reinstall or replace the lower paper guide as necessary. The replacement procedure is the reverse of the removal procedure.
2. Check/adjust (ADJ 7.1) Cassettte Feed Solenoid.
3. Check/adjust (ADJ 10.3) Checking Ground Continuity.
4. Go to System Checkout in Section 1.

REP 11.1 Exit Roller Assembly (lower)

Parts List on PL 14

Removal

1. Switch off the machine on/off switch and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. Remove the top cover assembly (REP 14.1).
4. Remove the exit roller belt (REP 11.4)
5. (Figure 1) Remove the exit roller assembly (lower).

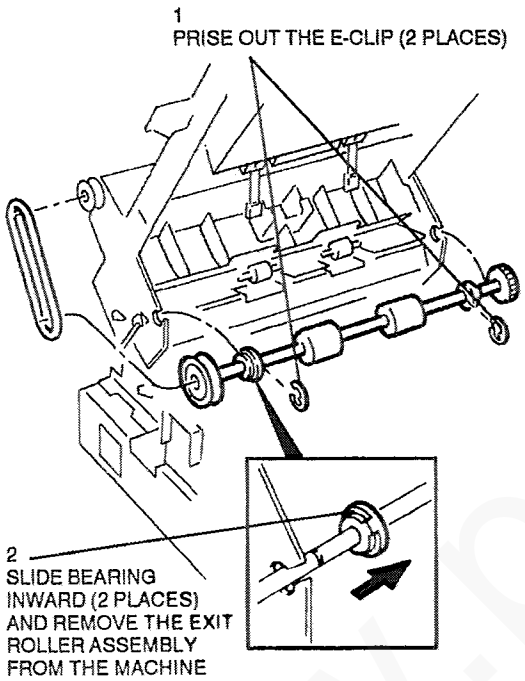


Figure 1. Exit roller aassembly (lower) removal

Replacement

1. Reinstall or replace the lower exit roller assembly as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 11.2 Exit Roller Belt

Parts List on PL 14

Removal

1. Switch off the machine on/off switch and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
2. Remove the top cover assembly (REP 14.1).
3. (Figure 1) Remove the exit roller belt.

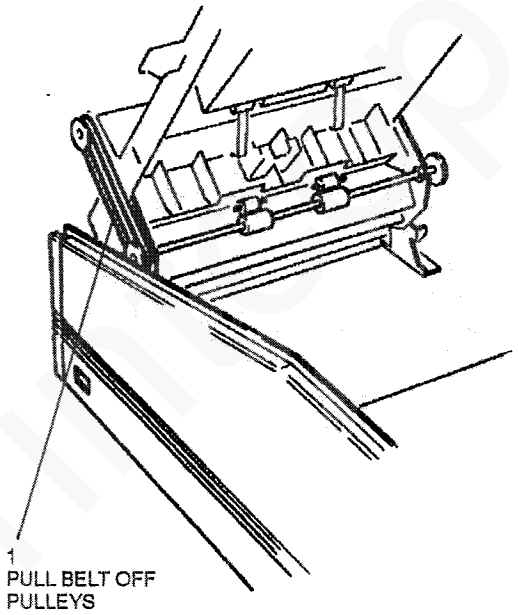


Figure 1. Exit roller belt removal

Replacement

1. Reinstall or replace the exit roller belt as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 11.3 Exit Roller Assembly (upper)

Parts List on PL 14

Removal

1. Switch off the machine on/off switch and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. Remove the top cover assembly (REP 14.1).
4. Remove the exit roller belt (REP 11.4)
5. (Figure 1) Remove the exit roller assembly (upper).

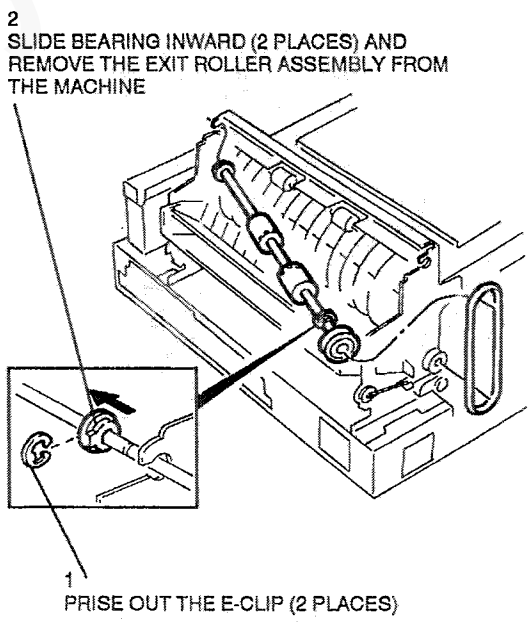


Figure 1. Exit roller assembly (upper) removal

Replacement

1. Reinstall or replace the exit roller assembly (upper) as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 11.4 Output rollers

Parts List on PL 14

Removal

1. Switch off the machine on/off switch and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. Remove the top cover assembly (REP 14.1).
4. (Figure 1)remove the output rollers.

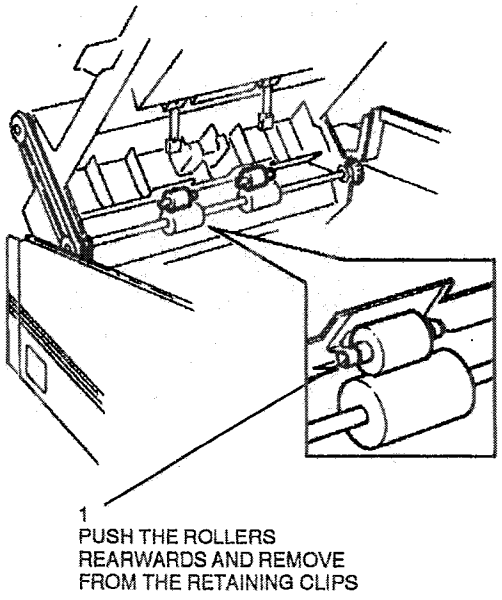


Figure 1. Output roller removal

Replacement

1. Reinstall or replace the output rollers as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 11.5 Divert Gate Spring

Parts List on PL 14

Removal

1. Switch off the machine on/off switch and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. Remove the top cover assembly (REP 14.1).
4. Move the paper path select lever to the face down position.
5. (Figure 1) Remove the divert gate spring.

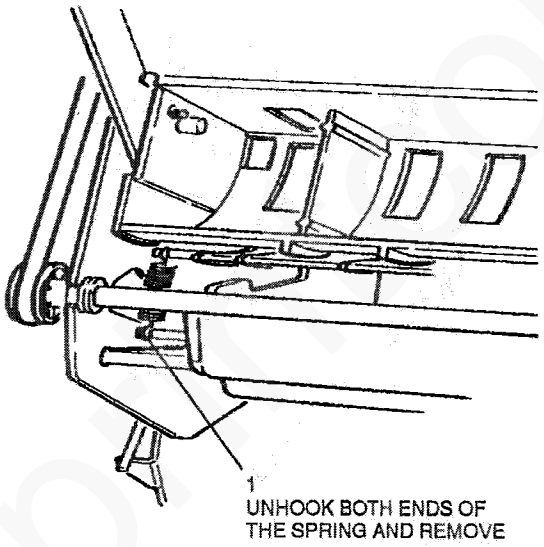


Figure 1. Divert gate spring removal

Replacement

1. Reinstall or replace the divert gate spring as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 14.1 Top Cover Assembly

Parts List on PL 3

Removal

1. Switch off the machine on/off switch and disconnect the printer power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. (Figure 1), Remove the top cover assembly.

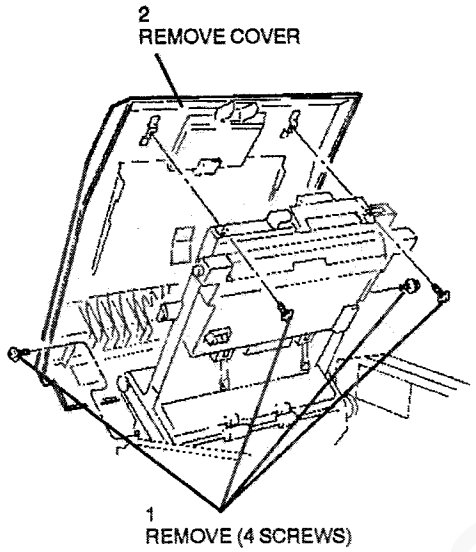


Figure 1. Top cover removal

Replacement

CAUTION

When replacing or re-installing the top cover, ensure that the grounding wire from the ROS assembly is clamped below the head of the top right hand screw.

1. Reinstall or replace the top cover as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 14.2 Left Side Cover

Parts List on PL 3

Removal

1. Remove the top cover (REP 14.1).
2. Remove the front cover (REP 14.6).
3. Remove the rear cover (REP 14.7).

CAUTION

When removing this cover, ease the locating lugs on the inside of the cover out of the corresponding cut-outs in the printer frame. Do not use excessive force or the lugs will break.

4. (Figure 1) Remove the left side cover.

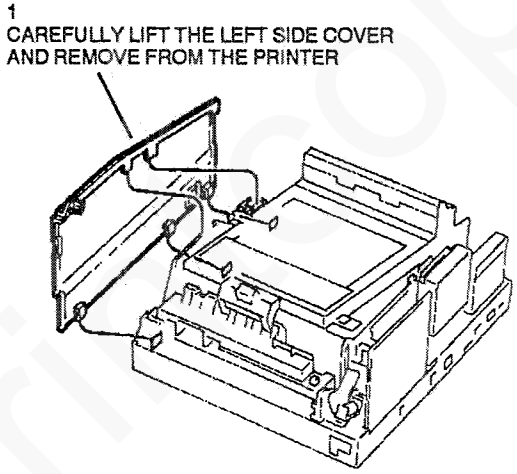


Figure 1. Left side cover removal

Replacement

WARNING

When replacing this cover, carefully align ALL of the locating lugs on the inside of the cover with the corresponding cut-outs in the printer frame. Do not use excessive force or the lugs will break.

1. Reinstall or replace the left side cover as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

NOTE: If this cover is not installed correctly, the printer may display a "COVER OPEN" error message.

REP 14.3 Right Side Cover

Parts List on PL 3

Removal

1. Remove the top cover (REP 14.1).
2. Remove the front cover (REP 14.6).
3. Remove the rear cover (REP 14.7).

CAUTION

When removing this cover, ease the locating lugs on the inside of the cover out of the corresponding cut-outs in the printer frame. Do not use excessive force or the lugs will break.

4. (Figure 1) Remove the right side cover.

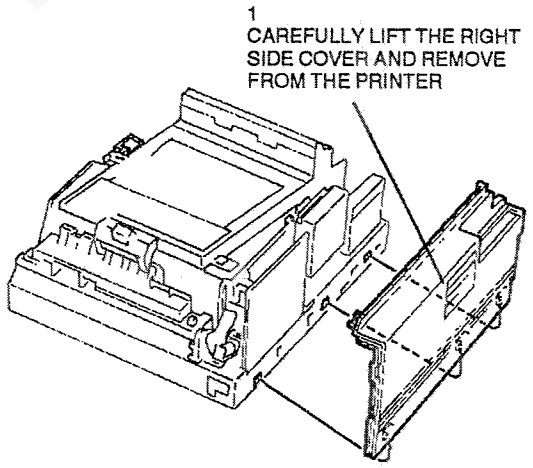


Figure 1. Right side cover removal

Replacement

CAUTION

When replacing this cover, carefully align the locating lugs on the inside of the cover with the corresponding cut-outs in the printer frame. Do not use excessive force or the lugs will break.

Ensure that the laser scanner unit harness is correctly located in the recess in the fan assembly before refitting the cover.

1. Reinstall or replace the right side cover as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 14.4 Opening Latch Assembly

Parts List on PL 14

Removal

1. Remove the top cover (REP 14.1).
2. (figure 1) Remove the opening latch assembly.

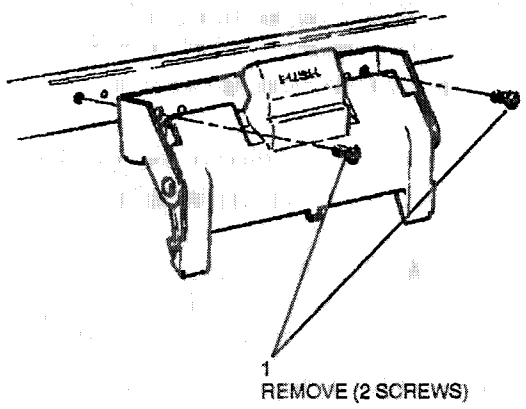


Figure 1. Opening latch assembly removal

Replacement

1. Reinstall or replace the opening latch assembly as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 14.5 Legal Tray Extension

Parts List on PL 3

Removal

1. (Figure 1) Remove the legal tray extension.

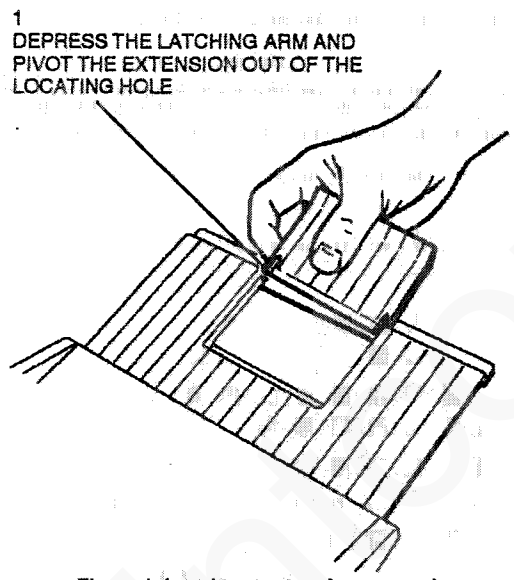


Figure 1. Legal tray extension removal

Replacement

1. Reinstall or replace the legal tray extension as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 14.6 Front Cover

Parts List on PL 3

Removal

1. Switch off the machine on/off switch and disconnect the printer power cord.
2. Remove the paper input tray.
3. Remove the user interface panel (REP 2.2).

CAUTION

When removing this cover, ease the locating lugs on the inside of the cover out of the corresponding cut-outs in the printer frame. Do not use excessive force or the lugs will break.

4. (Figure 1) Remove the front cover.

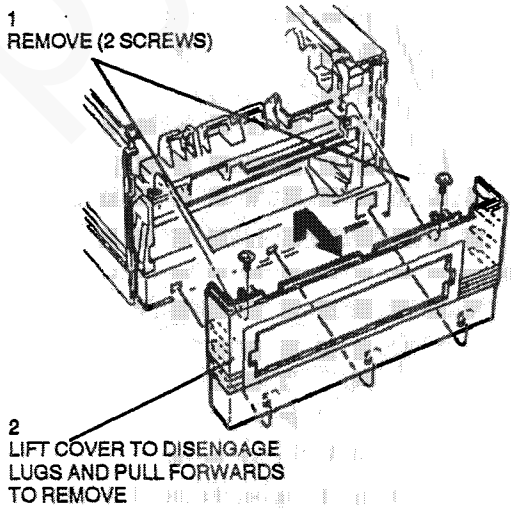


Figure 1. Front cover removal

Replacement

CAUTION

When replacing this cover, carefully align the locating lugs on the inside of the cover with the corresponding cut-outs in the printer frame and the side covers. Do not use excessive force or the lugs will break.

1. Reinstall or replace the front cover as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 14.7 Rear Cover

Parts List on PL 3

Removal

1. Switch off the machine on/off switch and disconnect the printer power cord.
2. Remove the font cartridge cover (REP 14.9) and the font cartridge, if fitted.
3. Remove any serial ar parallel interface cable, then remove the ESS controller PWBA (REP 3.3).
4. Remove the developer unit and print cartridge; place the print cartridge in a lightproof bag.
5. Remove the top cover (REP 14.1).
6. Remove the 2nd paper tray, if fitted.
7. Remove the face-up paper output tray, if fitted.

CAUTION

When removing this cover, ease the locating lugs on the inside of the cover out of the corresponding cut-outs in the printer frame and side covers. Do not use excessive force or the lugs will break.

8. (Figure 1) Remove the rear cover.

Replacement

CAUTION

When replacing this cover, carefully align the locating lugs on the inside of the cover with the corresponding cut-outs in the printer frame and the side covers. Do not use excessive force or the lugs will break.

1. Reinstall or replace the rear cover as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

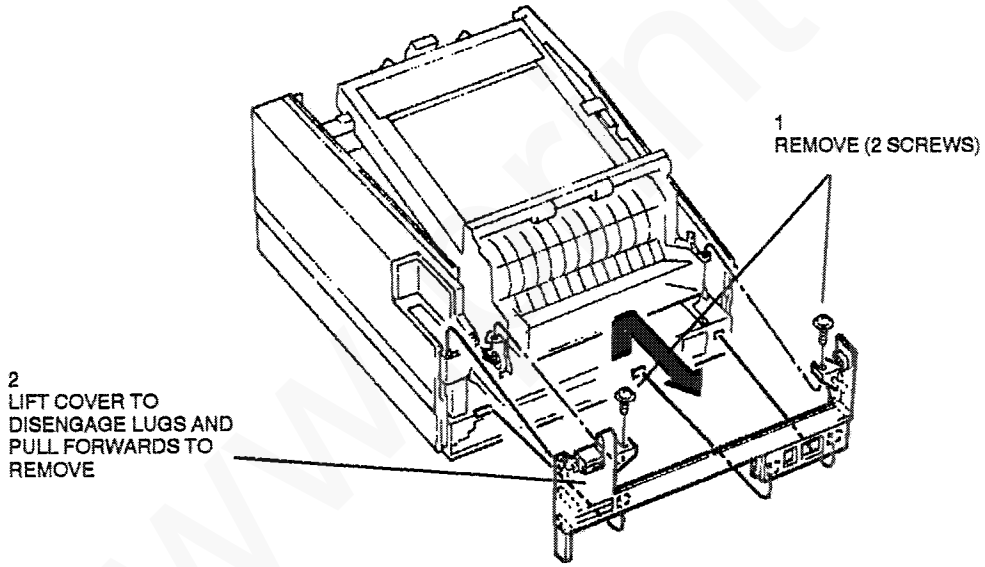


Figure 1. Rear cover removal

REP 14.8 User Interface Cover

Parts List on PL 7

Removal

1. Remove the user interface panel (REP 2.2).
2. (Figure 1) Remove the user interface cover.

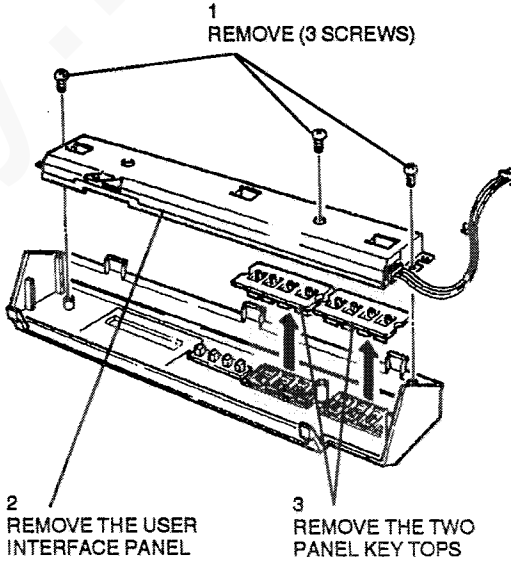


Figure 1. User interface cover removal

Replacement

1. Reinstall or replace the user interface cover as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 14.9 Font Cartridge Cover

Parts List on PL 3

Removal

1. (Figure 1) Remove the font cartridge cover.

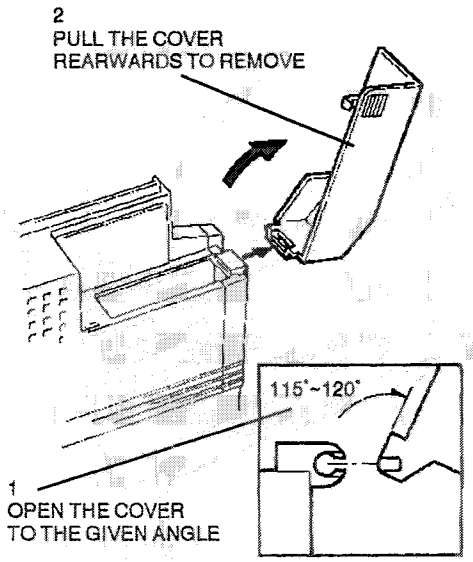


Figure 1. Font cartridge cover removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 14.10 Rubber Foot

Parts List on PL 4

Removal

1. Switch off the machine on/off switch and disconnect the printer power cord.
2. Remove the developer unit and print cartridge from the printer. Place the print cartridge in a lightproof bag.
3. Remove the paper input tray.
4. Remove the tray 2, if fitted (REP 7.5 in Section 8).
5. Remove the face-up paper output tray, if fitted.
6. Carefully position the machine on its side, using a drop sheet to protect the covers and the worktop.
7. Remove the eight screws securing the baseplate and remove the baseplate.
8. (Figure 1) Remove the rubber foot.

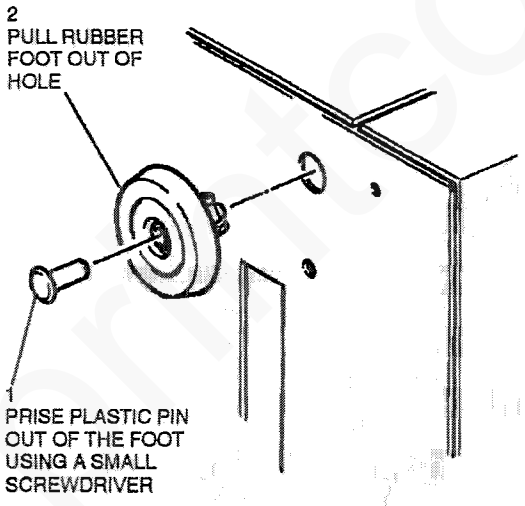


Figure 1. Rubber foot removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 14.11 Opening Latch Spring

Parts List on PL 14

Removal

1. Open the printer top cover.
2. (Figure 1) Remove the opening latch spring.

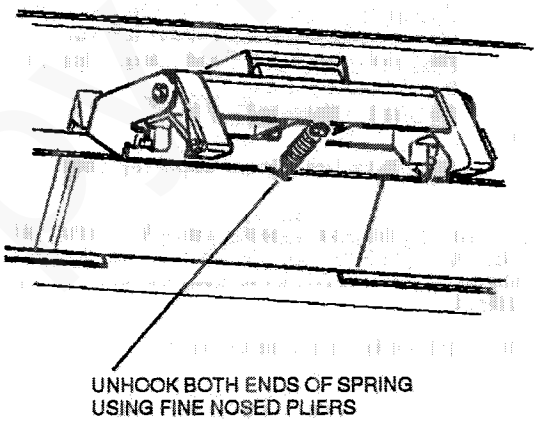


Figure 1. Opening latch spring removal

Replacement

1. Reinstall or replace the opening latch spring as necessary.
2. The reinstallation procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 14.12 Front Frame Assembly

Parts List on PL 10

Removal

1. Switch off at the machine on/off switch and disconnect the power cord.
2. Remove the developer unit and print cartridge from the machine. Place the print cartridge in a lightproof bag.
3. Remove the paper input tray.
4. Remove the tray 2, if fitted (REP 7.5 in Section 8).
5. Remove the face-up paper output tray, if fitted.
6. Remove the left side cover REP 14.2.
7. Remove the right side cover REP 14.3.
8. (Figure 1) Remove the front frame assembly.

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

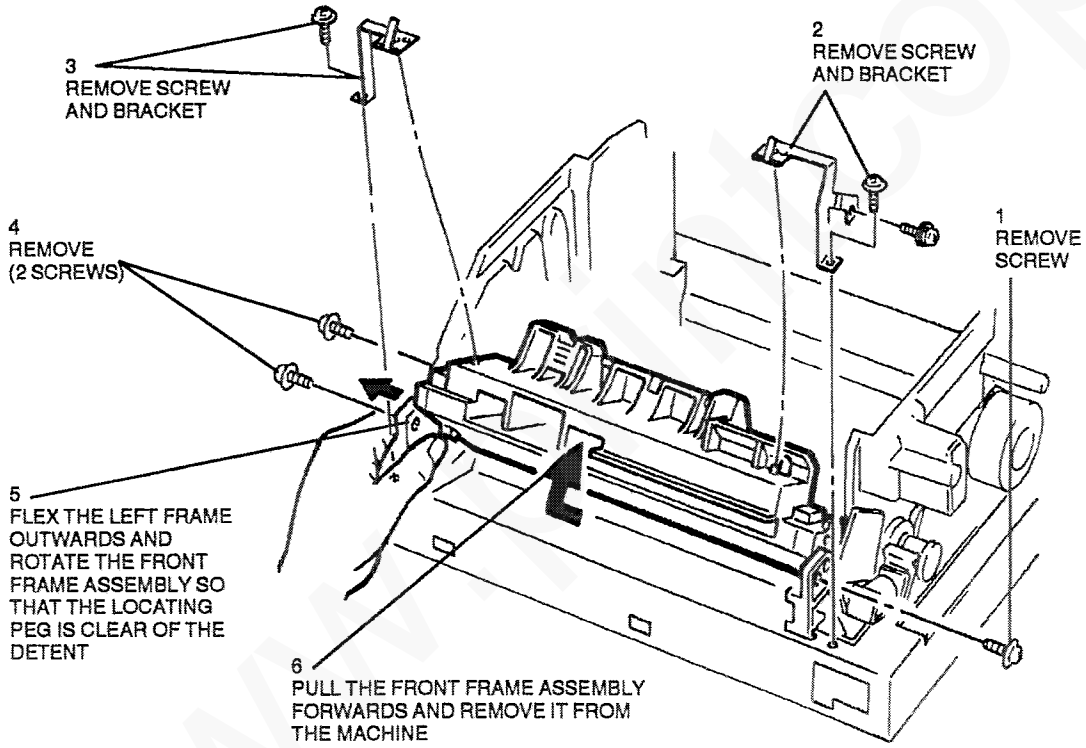


Figure 1. Front frame assembly removal.

Notes

ADJ 4.1
Right side frame drive gears lubrication

Purpose

The right side frame drive gears require periodic lubrication.

Procedure

CAUTION

Only use the specified lubricants. Only lubricate the parts described in this procedure. Avoid excessive lubrication. Ensure that all excess lubricant is removed from the printer.

WARNING

Do not allow silicon grease to come into contact with the eyes or sensitive parts of the body.

1. Remove the right side frame assembly (REP 4.3).
2. (Figure 1) Lubricate the drive gears as indicated.
3. Wipe off any excess lubricant.
4. Reinstall the right side frame assembly (REP 4.3).

3 LUBRICATE ALL OF THE GEARS OF THE GEARBOX WITH SILICONE GREASE 600T90429

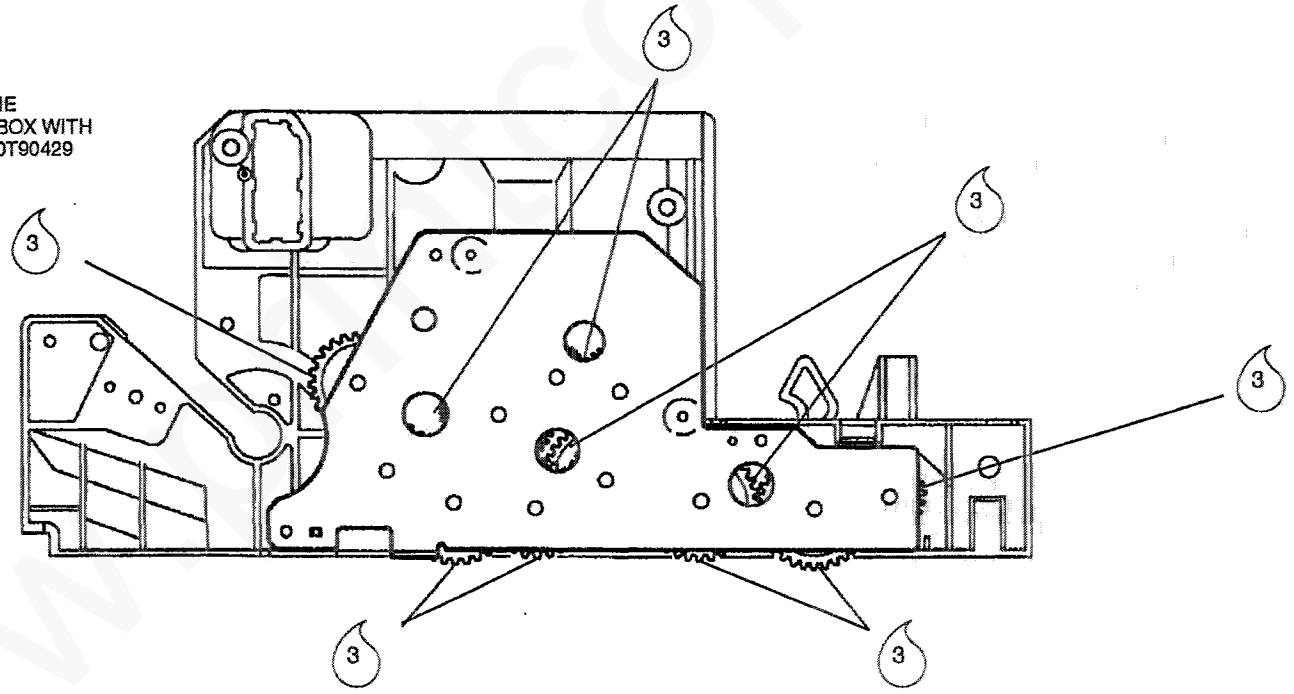


Figure 1. Right side frame drive gears lubrication

ADJ 6.1
Vertical & Horizontal Alignment

Purpose

This procedure allows the position of the image on the page to be adjusted, by controlling the left margin and top margin sizes. This procedure must be performed whenever the laser scanner unit, IOT controller PWBA or paper feed rollers are replaced.

NOTE: This procedure is specific to prints from tray 1 only; it is not possible to adjust the vertical and horizontal alignment of prints from tray 2 independently.

Procedure

1. Switch off the printer power.
2. Remove tray 2, if fitted (REP 7.5 in Section 8).
3. Unplug the print counter and install the service print counter (Figure 1).
4. Switch on the printer power, while pressing the MENU button on the user interface panel; the user interface will display the message "**********", followed by "L=±0.0: T=±0.0*A" (Figure 1).
5. (Table 1) Adjust the paper setting to suit the paper in the input tray.
6. Press the RESET/CONTINUE button to produce a test print; the test pattern consists of a rectangle printed on the paper to show the top of form and left margin.
7. (Figure 2) Measure the left margin and top of form margin of the test pattern; the left margin should be 4.2mm and the top of form margin should be 4.2mm.
8. (Table 1) If the margins are incorrect, calculate the change(s) required and adjust the set values as necessary.
9. Press the ON LINE button to set the values; the user interface should display a "*" at the right of the display to indicate that the values are saved.
10. Press the RESET/CONTINUE button to produce a test print.
11. (Figure 2) Measure the left margin and top of form margin of the test pattern; the left margin should be 4.2mm and the top of form margin should be 4.2mm.
12. If the margins are incorrect, re-adjust the set values and check test prints until the margins are set correctly.
13. Switch off the printer power.
14. Reinstall tray 2, if removed.
15. Unplug the service print counter and reinstall the print counter.
16. Go to System Checkout in Section 1.

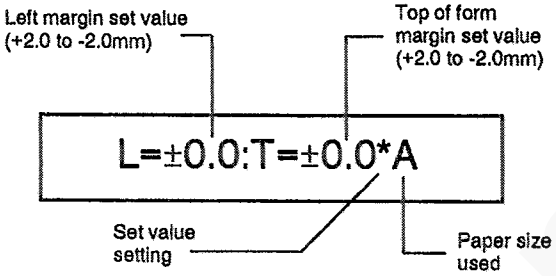


Figure 1. User interface display

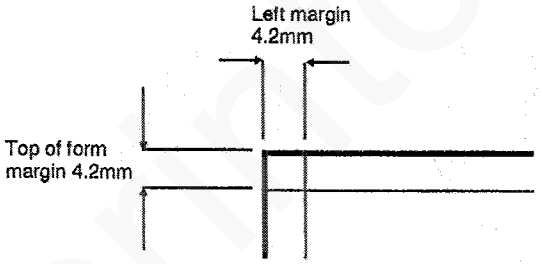


Figure 2. Measuring left and top margins

User interface button	Function
MENU	Increases the left margin set value.
UP	Decreases the left margin set value.
DOWN	Increases the top margin set value.
ENTER	Decreases the top margin set value.
RESET/CONTINUE	Produces the left/top margin test print.
TEST	Selects the paper size (A = A4, L = Letter).
LAST PAGE	Unused.
ON LINE	Sets the selected values (a "*" appears at the right of the display to indicate that the values are saved).

Table 1. Vertical and horizontal alignment

ADJ 6.2
ROS Window Cleaning

Purpose

The purpose of this procedure is to clean any toner or paper particles from the ROS window, to prevent any degradation of image quality.

NOTE: This cleaning procedure should be performed at every service call.

Procedure

CAUTION

Take care not to scratch or damage the ROS window during the cleaning procedure. Do not use any solvent or cleaning agent during this procedure.

1. Switch off the printer power and disconnect the power cord.
2. (Figure 1)Open the printer cover and carefully clean the ROS window using a lint free cloth.

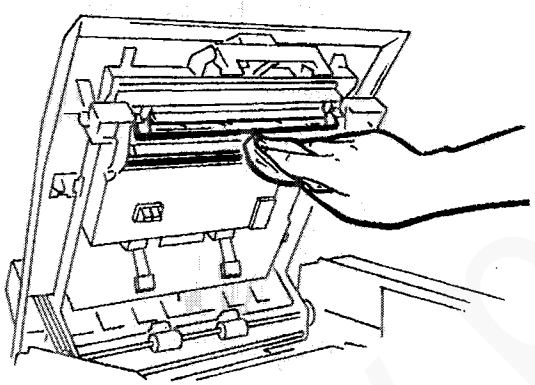


Figure 1. ROS window cleaning

ADJ 7.1
Cassette Feed Solenoid

Purpose

This procedure must be performed whenever the cassette feed solenoid is removed, or when directed by a Repair Analysis Procedure.

Initial Actions

- Inspect the cassette feed solenoid armature for damage; if it is damaged, replace the cassette feed solenoid (REP 7.2).

Check

1. Switch off the printer and remove the power cord.
2. Remove the IOT controller PWBA.
3. (Figure 1) Turn the cassette feed roller, until the claw of the clutch spring touches the armature of the cassette feed solenoid.

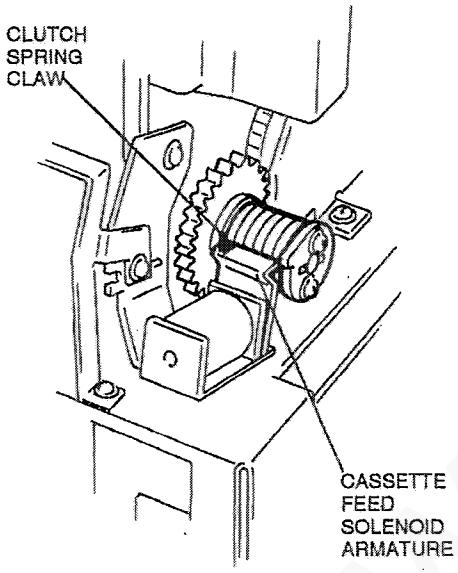


Figure 1. Aligning claw to armature

4. (Figure 2) Measure the clearance between the clutch spring claw and the cassette feed solenoid armature.

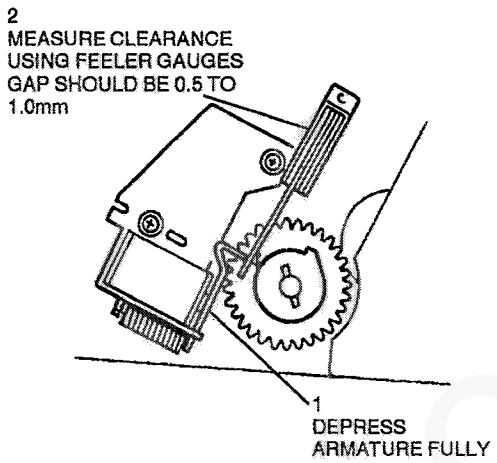


Figure 2. Measuring armature clearance

5. (Figure 3) Turn the cassette feed roller one more turn, until the clutch spring claw touches the armature of the cassette feed solenoid, then measure the clearance between the armature and the stopper hook.

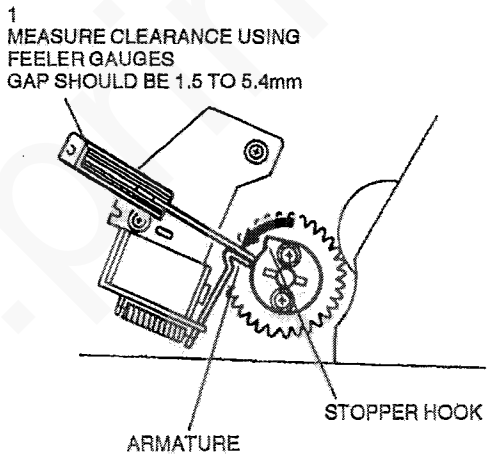


Figure 3. Checking stopper hook clearance

Adjust

1. (Figure 4) Adjust the clearance between the clutch spring claw and the cassette feed solenoid armature.

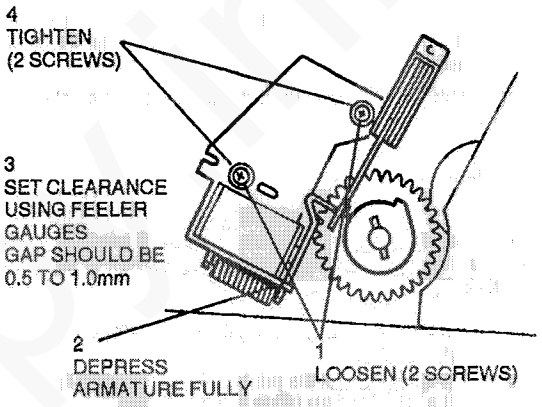


Figure 4. Adjusting armature clearance

2. (Figure 5) Turn the cassette feed roller one more turn, until the claw of the clutch spring touches the armature of the cassette feed solenoid, then adjust the clearance between the armature and the stopper hook.

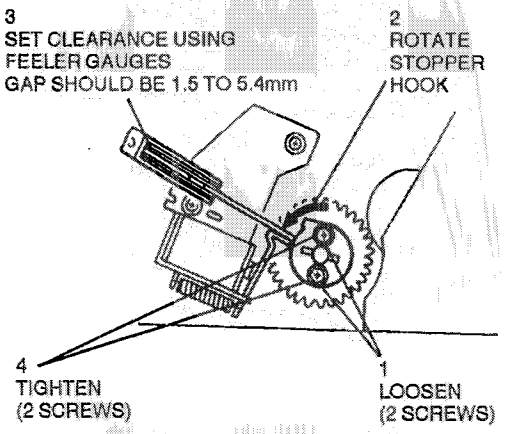


Figure 5. Adjusting stopper hook clearance

3. Reinstall the removed components.
4. Perform the Vertical & Horizontal Alignment (ADJ 6.1).
5. Go to the System Checkout in Section 1.

ADJ 7.2
Cassettte feed clutch spring lubrication

Purpose

The cassette feed clutch spring requires periodic lubrication.

Procedure

CAUTION

Only use the specified lubricants. Only lubricate the parts described in this procedure. Avoid excessive lubrication. Ensure that all excess lubricant is removed from the printer.

1. Remove the right side cover (REP 14.3).
2. (Figure 1) Lubricate the cassette feed clutch spring as indicated.

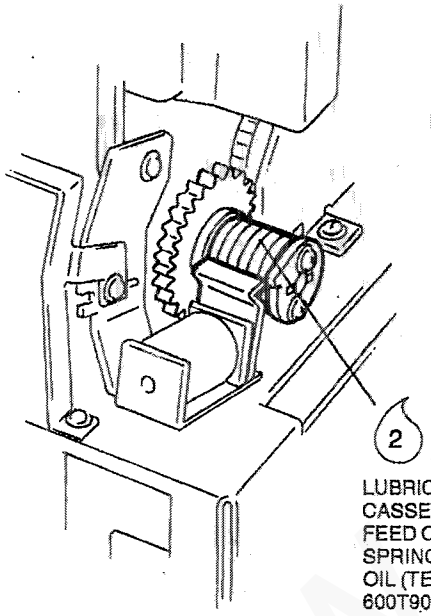


Figure 1. Lubricating cassette feed clutch spring

3. Wipe off any excess lubricant.
4. Reinstall the right side cover.

ADJ 8.1
Paper Path Cleaning

Purpose

The purpose of this procedure is to clean any obstructions, paper particles or toner from the paper path.

NOTE: This cleaning procedure should be performed at every service call.

Procedure

CAUTION

Do not use any solvent or cleaning agent on the print cartridge or developer unit.

When handling the developer unit take care not to touch the toner roll; touching the toner roll may damage it and degrade image quality.

When handling the print cartridge take care not to touch the photoreceptor; touching the photoreceptor will damage it and degrade image quality.

1. Switch off the printer power and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. Inspect all components along the paper path for obstructions, damage or contamination. Remove any obstructions and replace any damaged components.
4. (Figure 1) Clean the entire paper path using a soft cloth and general cleaning solvent 8R90176.
5. Remove any excess toner from the printer using a vacuum cleaner with an appropriate soft (rubber) nozzle.

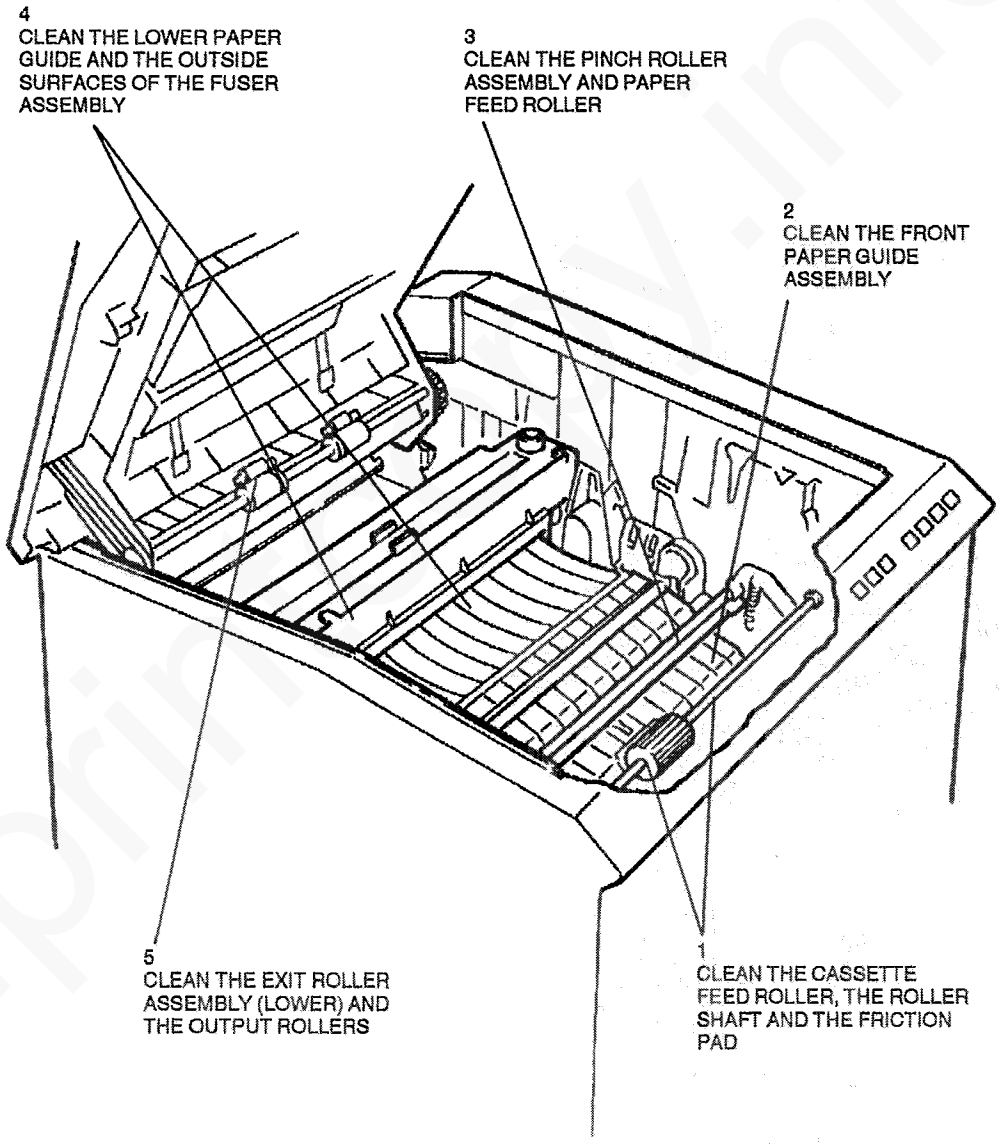


Figure 1. Paper path cleaning

6. (Figure 2) Clean the developer unit doctor blade.

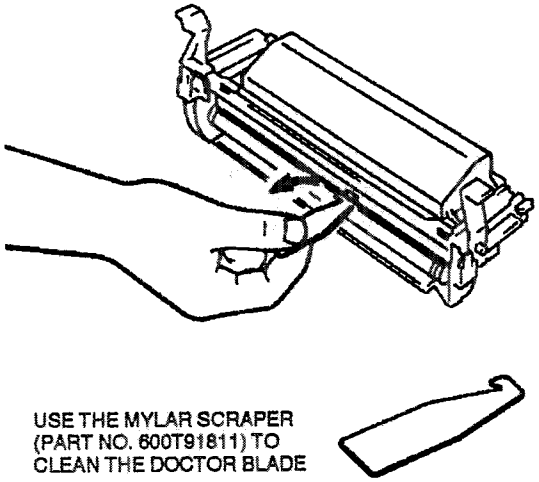


Figure 2. Doctor blade cleaning

7. (Figure 3) Clean the mylar strip at the base of the developer unit.

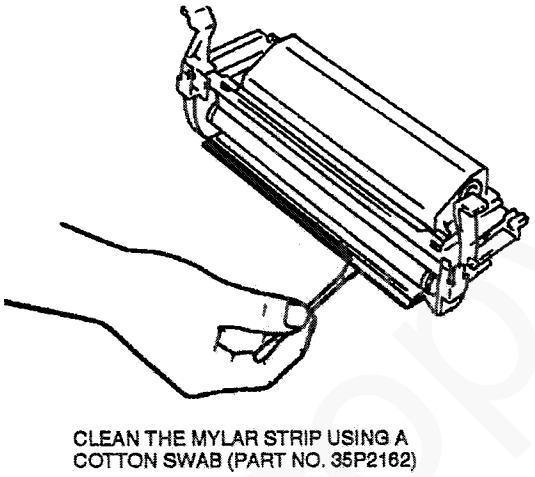


Figure 3. Mylar strip cleaning

8. (Figure 4) Clean the ends of the magnetic roll. Gently shake the developer unit from side to side after cleaning to ensure that the toner in the developer unit is evenly distributed.

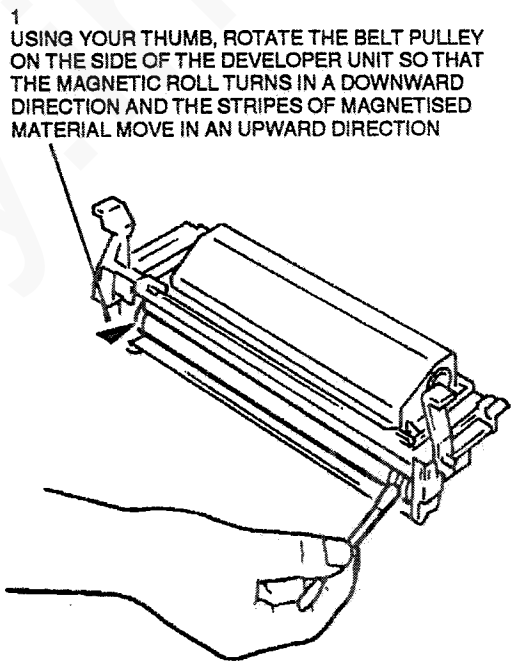


Figure 4. Magnetic roll cleaning

9. Clean the outside of the print cartridge using a dry cloth or soft brush.
10. Remove and inspect the fuser cleaning pad; reinstall the cleaning pad, or replace the pad if it is excessively stained or dirty.
11. Reinstall the developer unit and print cartridge.

ADJ 9.1
High Voltage Terminal & Contact Cleaning

Purpose

The purpose of this procedure is to clean any contamination, dirt or toner from the high voltage terminals and contacts in the printer.

NOTE: This cleaning procedure should be performed only when directed by a repair analysis procedure.

Procedure

CAUTION

Do not use any solvent or cleaning agent during this procedure.

When handling the developer unit take care not to touch the toner roll; touching the toner roll may damage it and degrade image quality.

When handling the print cartridge take care not to touch the photoreceptor; touching the photoreceptor will damage it and degrade image quality.

1. Switch off the printer power and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. (Figure 1) Clean the terminals and contacts of the right high voltage connectors,

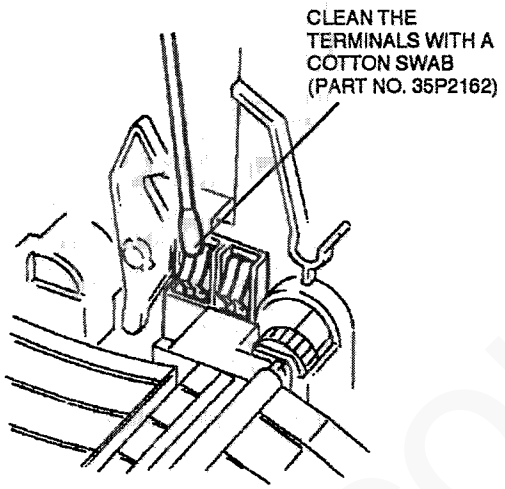


Figure 1. Right high voltage terminal cleaning

4. (Figure 2) Clean the terminals and contacts of the left high voltage connectors,

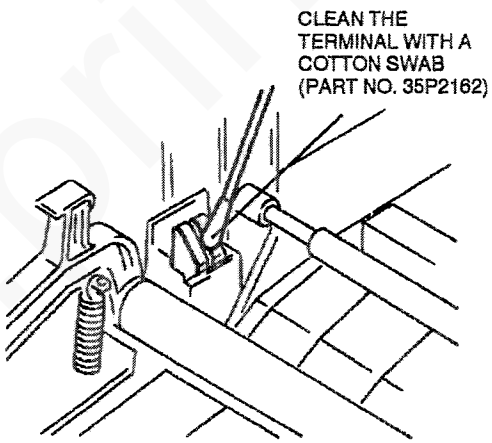


Figure 2. Left high voltage terminal cleaning

5. (Figure 3) Clean the contacts on the developer unit.

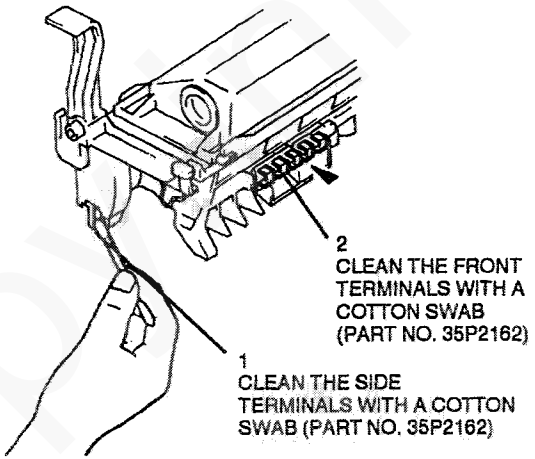


Figure 3. Developer unit contacts cleaning

6. (Figure 4) Clean the contacts on the front frame.

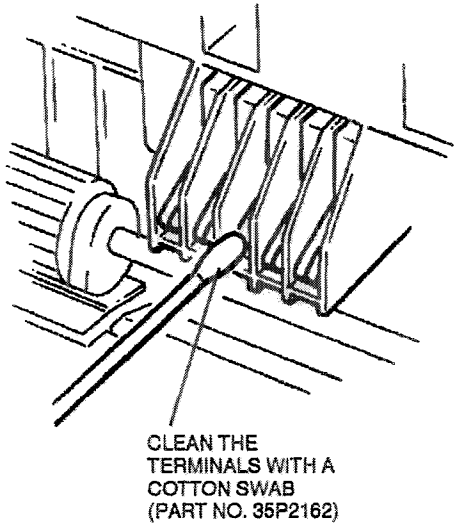


Figure 4. Front frame contacts cleaning

7. (Figure 5) Clean the contacts on the top of the print cartridge.

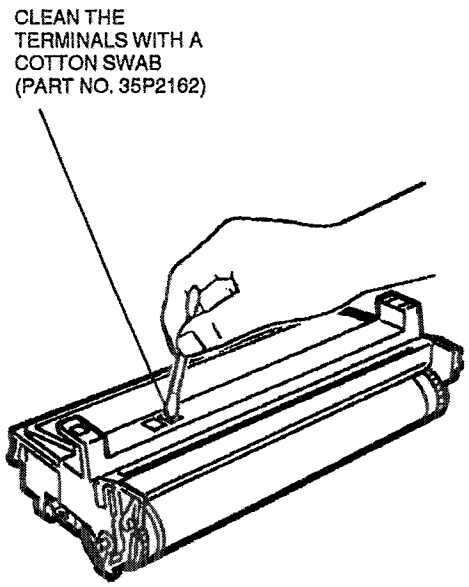


Figure 5. Print cartridge top contacts cleaning

8. (Figure 6) Clean the contacts on the side of the print cartridge.

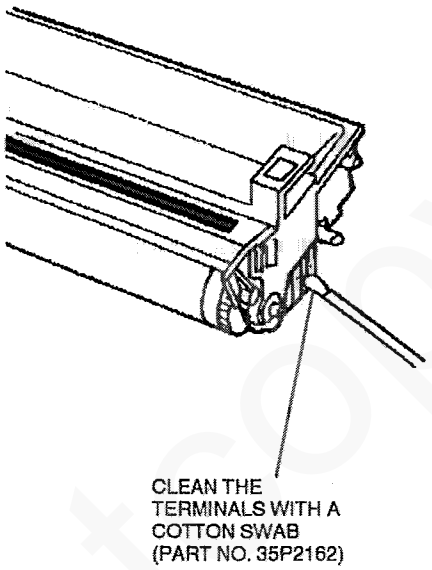


Figure 6. Print cartridge side contacts cleaning

9. (Figure 7) Clean the photoreceptor ends.

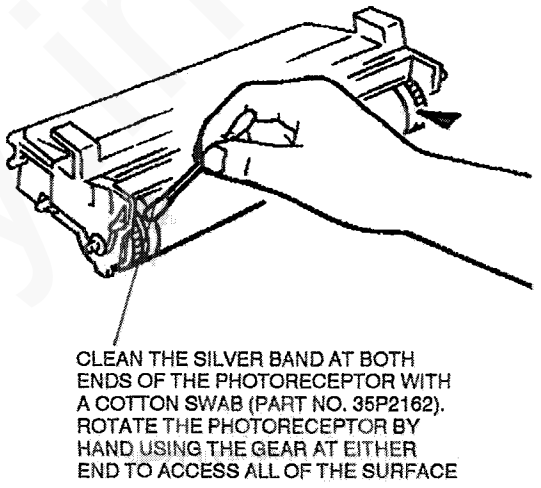


Figure 7. Photoreceptor cleaning

10. Reinstall the developer unit and print cartridge.

ADJ 9.2
Transfer/detack Corotron Wire Cleaning

Purpose

The purpose of this procedure is to clean any contamination, dirt or toner from the transfer/detack corotron wires.

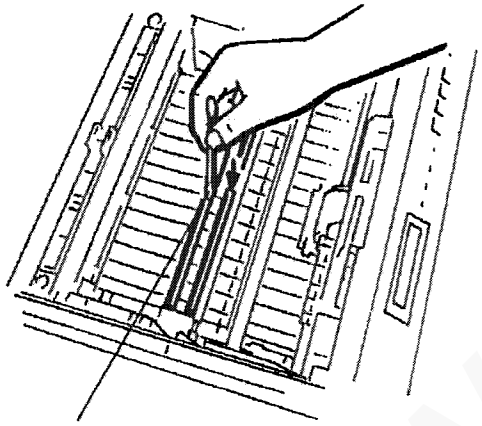
NOTE: This cleaning procedure should be performed at every service call.

Procedure

1. Switch off the printer power and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. (Figure 1) Clean the transfer and detack corotron wires.

CAUTION

Do not use excessive pressure when cleaning the corotron wires, or they may break. Do not use any solvent or cleaning agent during this procedure.



CAREFULLY WIPE ALONG BOTH COROTRON WIRES TO REMOVE ANY CONTAMINATION USING A COTTON SWAB (PART NO. 35P2162)

Figure 1. Transfer and detack corotron cleaning

4. Reinstall the developer unit and print cartridge.

ADJ 9.3
Photoreceptor Corotron Wire Cleaning

Purpose

The purpose of this procedure is to remove any dirt, contamination or toner from the photoreceptor corotron wire.

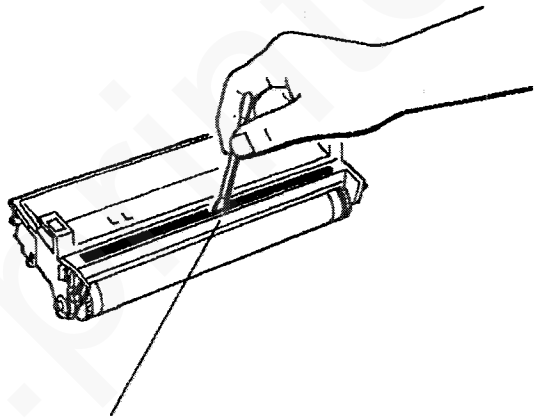
NOTE: This cleaning procedure should be performed at every service call.

Procedure

1. Switch off the printer power and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. (Figure 1) Clean the photoreceptor corotron wire.

CAUTION

Do not use excessive pressure when cleaning the corotron wire, or it may break. Do not use any solvent or cleaning agent during this procedure.



CAREFULLY WIPE ALONG THE COROTRON WIRE TO REMOVE ANY CONTAMINATION USING A COTTON SWAB (PART NO. 35P2162)

Figure 1. Photoreceptor corotron cleaning

4. Reinstall the developer unit and print cartridge.

ADJ 9.4
Adjusting Print Density

Purpose

This procedure allows the print density to be increased or decreased for specific applications.

NOTE: Adjusting the print density to several different settings and producing a test print for each setting is a useful method of checking that the IOT controller is changing the voltages produced by the high voltage power supply; if the image density does not alter, there is a problem with either the IOT controller PWBA, the high voltage power supply PWBA or the low voltage power supply PWBA.

Procedure

1. Switch off the printer power.
2. Switch on the printer power, while pressing the ON LINE ↦ button on the user interface panel; the user interface will display the message "**********", followed by "DENSITY = -2* :A4" (the figures will vary according to the printer settings).
3. (Table 1) Adjust the paper setting to suit the paper being used.
4. (Table 1) Adjust the density setting to the desired value (-2.0 to +2.0).
5. Press the ENTER ✳ button to save the setting; the user interface will display a "*" to the right of the value, to indicate that it has been saved.
6. Press the LAST PAGE button to produce a test print.
7. Press the RESET / CONTINUE ◇ button to return the printer ON LINE.

User interface button	Function
MENU	Selects the paper size (A = A4, LTR = Letter).
UP	Increases the print density value.
DOWN	Decreases the print density value.
ENTER	Saves the selected values.
RESET/CONTINUE	Returns the printer ON LINE.
TEST	Unused.
LAST PAGE	Produces a print density test print.
ON LINE	Unused.

Table 1. Adjusting print density

ADJ 9.5
Lubricating Developer Unit Drive Gears

Purpose

The developer unit drive gears require periodic lubrication.

Procedure

CAUTION

Only use the specified lubricants. Only lubricate the parts described in this procedure. Avoid excessive lubrication. Ensure that all excess lubricant is removed from the printer.

1. Switch off the printer power and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. (Figure 1) Lubricate the developer unit drive gears as indicated.
4. Wipe off any excess lubricant.
5. Reinstall the developer drive gear cover.

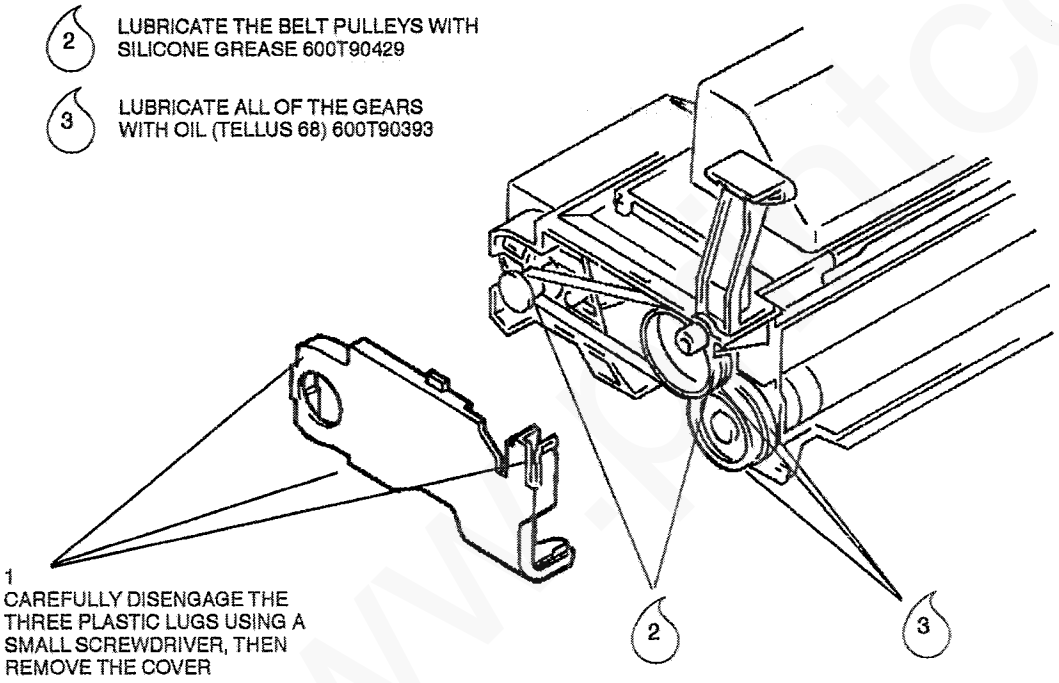


Figure 1. Developer drive gears lubrication

ADJ 9.6
Altitude Adjustment Procedure

Purpose

To compensate for the rise in fixed transfer corotron wire voltage where the machine is installed over 1000 metres (3300 ft) above sea level.

Applicable only to machines prior to serial number 1005561 (USO), (XCI) or 2017901 (RX).

NOTE: This adjustment is not a general procedure for Image Quality problems where the machine is sited below 1000 metres (3300 ft).

Procedure

Using a jewelers screwdriver with a tip size of 0.04 - 0.05mm (600T40207) will prevent the need to remove the HVPS board.

NOTE: Jewelers screwdriver 600T40207 is not in the standard tool kit.

1. Switch off the printer power and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge into a lightproof bag.
3. Remove Paper Tray 1 and Tray 2 if fitted.
4. Carefully place the printer on its right hand side using a drop cloth to protect the right cover finish.
5. Remove the base plate (8 screws).
6. Locate the hole for the adjustment of VR3 potentiometer, and the test points TP1 & TP2 on the HVPS PWBA (Figure 1).
7. Set the multimeter to the 20 K Ohm range.
8. Measure the resistance value between TP1 & TP2 bfore performing the adjustment and record this value as the INITIAL READING.
9. Determine the approximate altitude at which the machine is to be installed and select the Incremental Value K Ohms (see Table 1).
10. Calculate and record a NEW SET VALUE by adding the Increment Value in K Ohms to the INITIAL READING in K OHMS.

CAUTION

Do not use any downward pressure or the potentiometer may break.

11. Measure across TP1 & TP2 and using the jewelers screwdriver, adjust VR3 clockwise to the NEW SET VALUE calculated in step 10. (If the NEW SET VALUE is greater than the maximum value attainable on VR3, set VR3 to its maximum value and record this as the NEW SET VALUE.)
12. Obtain an adhesive label and record the INITIAL READING, NEW SET VALUE, ALTITUDE, LOCATION and DATE (see example Figure 2) and fix this securely to the baseplate of the printer to the right of the TAG MATRIX label. Mark off TAG 125 on the TAG MATRIX label.
13. Replace the baseplate.
14. Perform the System Checkout in section 1. If VR3 is limiting the correct value of the NEW SET VALUE and the Image Quality defect is still evident, it will be necessary to install a new HVPS and repeat the Altitude Adjustment Procedure again.

NOTE: After replacing a failed HVPS on a printer with TAG 125 embodied, (including 80 K maintenance), the Altitude Adjustment Procedure must be carried out and a new label fixed over the existing one showing the revised readings.

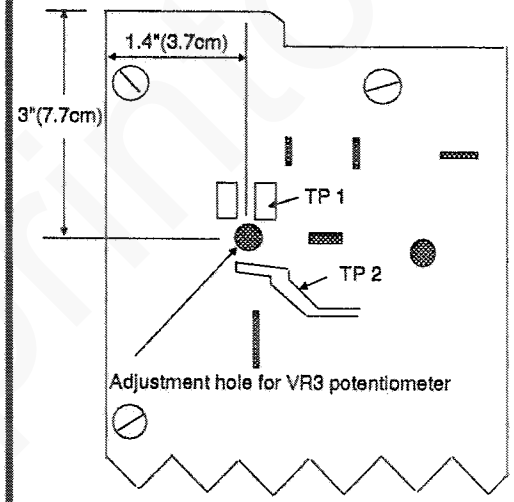


Figure 1. Adjustment hole and Test Point locations.

Altitude Range	Increment Value (K Ohms)
0 - 1000 metres (3300 ft)	No adjustment
1000 - 2000 metres (3300-6600ft)	+3.0 K Ohms
2000 - 3000 metres (6600-9900ft)	+6.0 K Ohms

Table 1. Incremental value against altitude.

INITIAL READING	_____
NEW SET VALUE	_____
ALTITUDE	_____
LOCATION	_____
DATE	_____

Figure 2. Adhesive label example.

ADJ 10.1
Fuser Temperature

Purpose

The fuser temperature can be adjusted to cope with different ambient temperatures. This procedure should only be performed when the IOT controller PWBA or fuser assembly is replaced, or when directed by a Repair Analysis Procedure.

Procedure

CAUTION

The fuser temperature can be set mistakenly to a temperature below ambient temperature; because the fuser cannot reach the set temperature, the printer becomes unserviceable. Do not set the fuser value displayed on the user interface below 80 or above 150.

1. Switch off the printer power.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. Unplug the print counter and install the service print counter.
4. Install the interlock cheater.
5. Switch on the printer power, while pressing the UP ▲ button on the user interface panel; the user interface will display the message "**********" followed by "<HET TEMP = 000#*" (Figure 1).

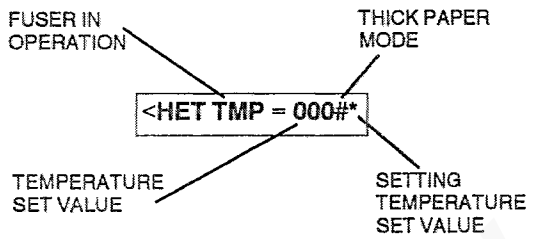


Figure 1. User interface display

6. Remove the fuser cleaning pad from the fuser assembly. Fix a strip of fuser temperature tape (600T90855) to the fuser cleaning pad (Figure 2).

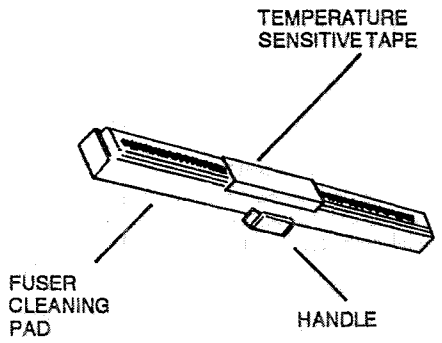


Figure 2. Fuser temperature tape

7. Press the DOWN ▼ button to turn the fuser on and drive the main motor. Run the printer in this state for approximately five to seven minutes to allow the fuser temperature to stabilise.
8. Observe the operating cycle of the fuser lamp, which can be seen illuminating at the lower left of the fuser assembly.; the lamp will illuminate for a short time and then extinguish for a short time before illuminating again and repeating the cycle.
9. Reinstall the fuser cleaning pad as the fuser lamp illuminates, and hold it lightly in place until the fuser has completed one complete cycle (i.e. lamp extinguishes, illuminates and then extinguishes again).
10. Remove the fuser cleaning pad and examine the temperature tape; the silver temperature sensitive areas of the tape will turn dark grey to indicate the highest temperature that the fuser has reached. The 160 degree section of the tape should be dark grey, the 166 degree section of the tape should be turning darker, and the 171 degree area should be silver.

NOTE: Examine the temperature tape immediately, because the dark areas tend to go lighter with time and become hard to distinguish.

11. (Table 1) If the temperature is incorrect, adjust the set values as necessary; each set value unit (1) is approximately 0.66 degrees (i.e. a temperature change of 7 degrees would need the set value to be adjusted by approximately 10).

User interface button	Function
MENU	Increase the set value
UP ▲	Decrease the set value
DOWN ▼	Turn fuser on and start main motor (press again to turn fuser off and stop main motor)
ENTER	Unused
RESET/CONTINUE	Unused
TEST	Unused
LAST PAGE	Unused
ON LINE	Save new set value

Table 1. Adjusting fuser temperature

12. Press the ON LINE button to set the value; the user interface should display a "*" at the right of the display to indicate that the value is saved.
13. Repeat steps 7 to 12 above to check the fuser temperature. Readjust and test the fuser temperature until the correct setting is achieved.
14. Switch off the printer power.
15. Unplug the service print counter and reinstall the print counter.
16. Reinstall the developer unit and print cartridge.
17. Go to System Checkout in Section 1.

ADJ 10.2
Fuser Assembly Inspection & Cleaning

Purpose

The purpose is to remove any toner that may have adhered to the fuser roll and pressure roll, and to check that the fuser assembly is in good condition.

NOTE: This cleaning procedure should be performed only when directed by a repair analysis procedure.

Procedure

WARNING

The fuser assembly operates at temperatures of 160 to 180 degrees Celsius. Switch off the printer power and allow the fuser to cool for at least 15 minutes before starting this procedure.

CAUTION

Use only the specified solvent during this procedure.

1. Switch off the printer power and disconnect the power cord.
2. Remove the fuser assembly from the printer (REP 10.1).
3. Inspect the fuser roll and pressure roll for wear or damage; if the rolls are excessively worn or damaged, replace the fuser assembly.
4. Clean the surface of the rolls with a cloth and general cleaning solvent 8R90176. If the fuser and pressure rolls cannot be adequately cleaned, replace the fuser assembly
5. Reinstall or replace the fuser assembly.
6. Reinstall the developer unit and print cartridge.
7. Go to System Checkout in Section 1.

ADJ 10.3
Checking Ground Continuity

Purpose

This procedure should be performed (as directed by the Repair procedures and Repair Analysis Procedures) to ensure that ground continuity is maintained to the photoreceptor shaft, the transfer/detack corotron cases, the cassette feed roller shaft and the paper feed roller shaft.

Initial Actions

Switch off the printer power and remove the power cord.

Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.

Procedure

CAUTION

When checking ground continuity of the transfer and detack corotron cases, take care not to damage the corotron wires.

Check that the transfer corotron case (Figure 1) and detack corotron case (Figure 2) are grounded properly by checking for continuity between each case and the printer frame.

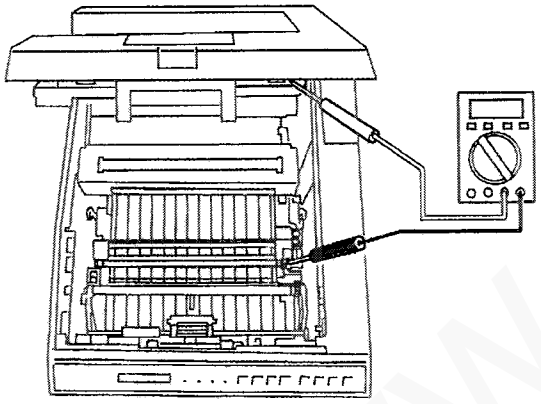


Figure 1. Checking transfer corotron case earth continuity

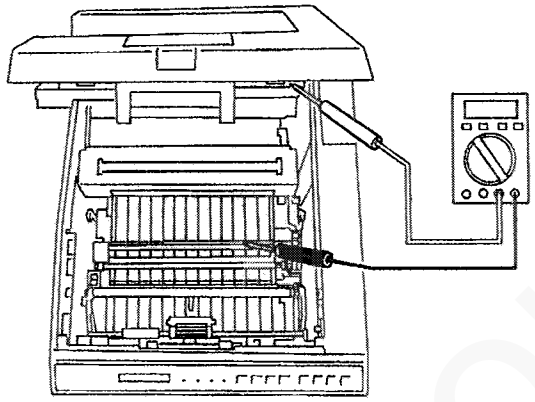


Figure 2. Checking detack corotron case earth continuity

There is less than 10 ohms of resistance between each case and the printer frame.

Y N

Perform the following actions:

- Remove the transfer/detack corotron assembly from the printer (REP 9.1).
- Inspect the sprung metal contacts located in the lower paper guide; if the contacts are damaged, replace the lower paper guide (REP 10.5).
- Clean the sprung metal contacts located in the lower paper guide.
- Clean the contact area on the bottom of the transfer/detack corotron case.
- Re-install the transfer/detack corotron assembly.

A

A

(Figure 3) Check that the cassette feed roller is grounded properly by checking for continuity between the cassette feed roller shaft and the printer frame.

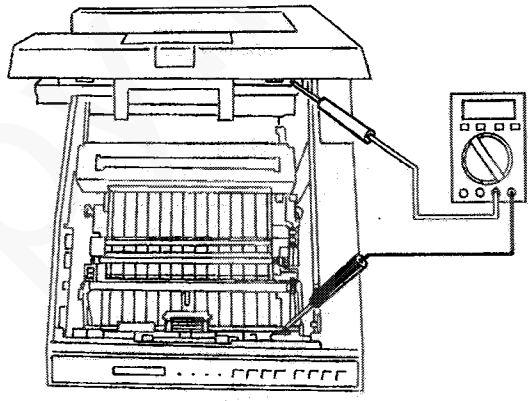


Figure 3. Cassette feed roller shaft earth continuity

There is less than 10 ohms of resistance between the cassette feed roller and the printer frame.

Y N

Inspect the left-hand end of the cassette feed roller shaft and its grounding tab for contamination. Ensure that the grounding tab is in contact with the cassette feed roller shaft. Clean the end of the shaft and the grounding tab apply conductive grease 70E110 to both parts. Install new parts if necessary.

B

B

(Figure 4) Check that the paper feed roller is grounded properly by checking for continuity between the roller and the printer frame.

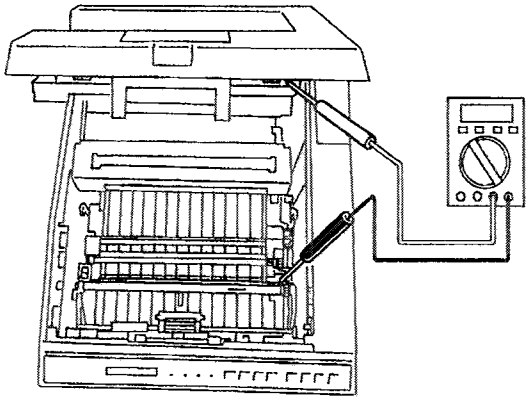


Figure 4. Checking paper feed roller shaft earth continuity

There is less than 20 ohms of resistance between the paper feed roller and the printer frame.

Y N

Inspect the left-hand end of the paper feed shaft and its grounding tab for contamination. Ensure that the grounding tab is in contact with the paper feed roller shaft. Clean the end of the shaft and the grounding tab apply conductive grease 70E110 to both parts. Install new parts if necessary.

Reinstall the developer unit and print cartridge.

C

C

(Figure 5) Check that the photoreceptor is grounded properly by checking for continuity between the outboard edge of the photoreceptor and the printer frame.

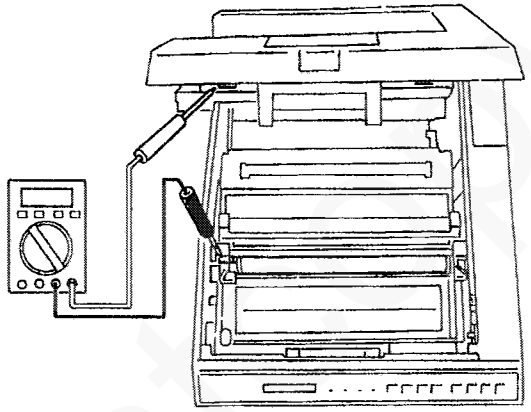


Figure 5. Checking photreceptor earth continuity

There is less than 20 ohms resistance between the photoreceptor shaft and the printer frame.

Y N

Inspect the left-hand end of the photoreceptor shaft and the photoreceptor grounding tab for damage or contamination. Ensure that the photoreceptor grounding tab is in contact with the photoreceptor shaft. Clean or replace as necessary.

Go to System Checkout in Section 1.

ADJ 14.1
Lubricating frame springs

Purpose

The frame springs require periodic lubrication.

Procedure

CAUTION

Only use the specified lubricants. Only lubricate the parts described in this procedure. Avoid excessive lubrication. Ensure that all excess lubricant is removed from the printer.

1. Switch off the printer power and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. (Figure 1) Lubricate the frame springs as indicated.

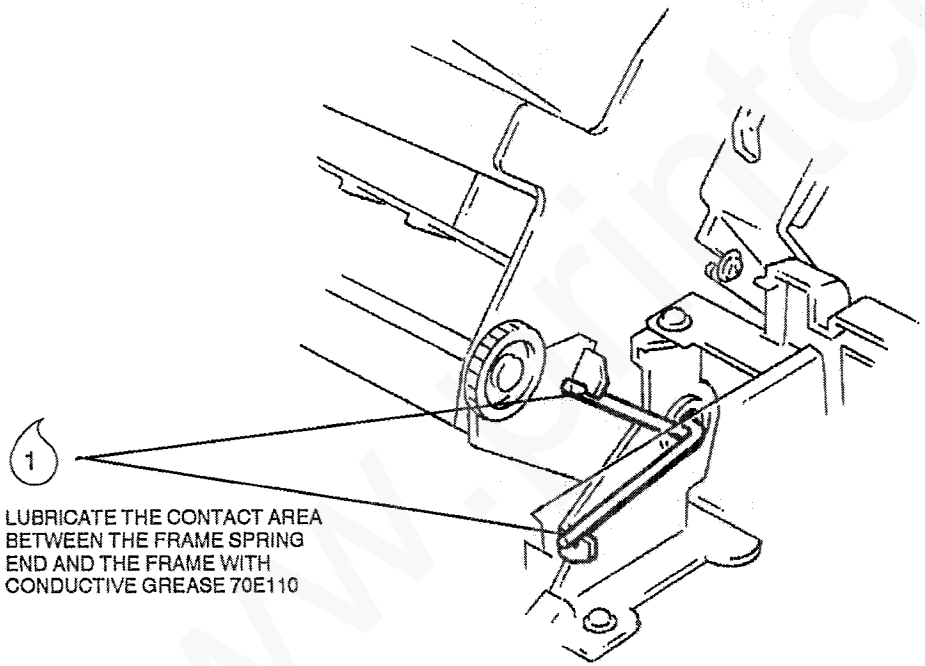


Figure 1. Lubricating frame spring

5. Parts List

Title — Page

Section Contents

Introduction

This Parts List section consists of illustrations of disassembled subsystems and associated parts lists. Parts information for accessories and optional items is contained in Section 8 of this manual.

Parts List Symbology

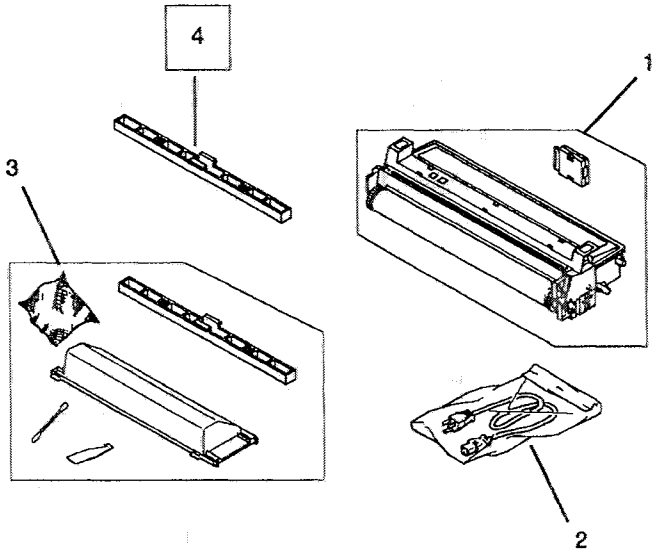
When found on a parts list callout, this symbol indicates that there is a Repair procedure in Section 4 for that component. Check the procedure for the correct sequence of repair, for warnings, for cautions and for other special conditions.

When found on a parts list callout, this symbol indicates that there is an Adjustment procedure in Section 4 for that component. Check the adjustment section for specification or procedure.

When found on a parts list callout, this symbol indicates that there is a Repair and Adjustment procedure in Section 4 for that component. Check the repairs section, adjustment section and adjustment specification for more information.

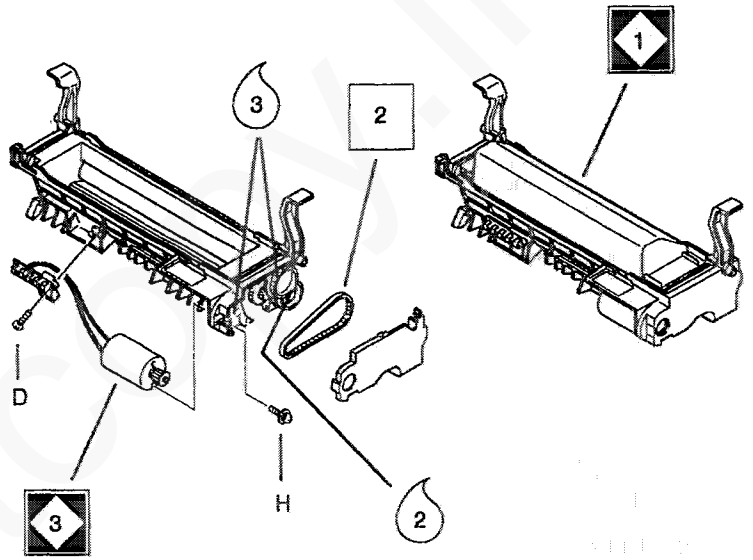
This symbol shows where a part must be lubricated, and the number in the symbol identifies what type of lubricant must be used. The description and part number of the lubricant is in the parts list.

PL 1 Customer Replaceable Units



Item	Part	Description
1	13R00064	PRINT CARTRIDGE (& PRINT COUNTER)
2	152S92957	220V POWER CORD
2	117P8929	115V POWER CORD
3	6R90187	SUPPLY TONER CARTRIDGE (& MYLAR SCRAPER, COTTON SWAB, FUSER CLEANING PAD, CLEANING CLOTH)
4	19E17500	FUSER CLEANING PAD

PL 2 Developer Assembly



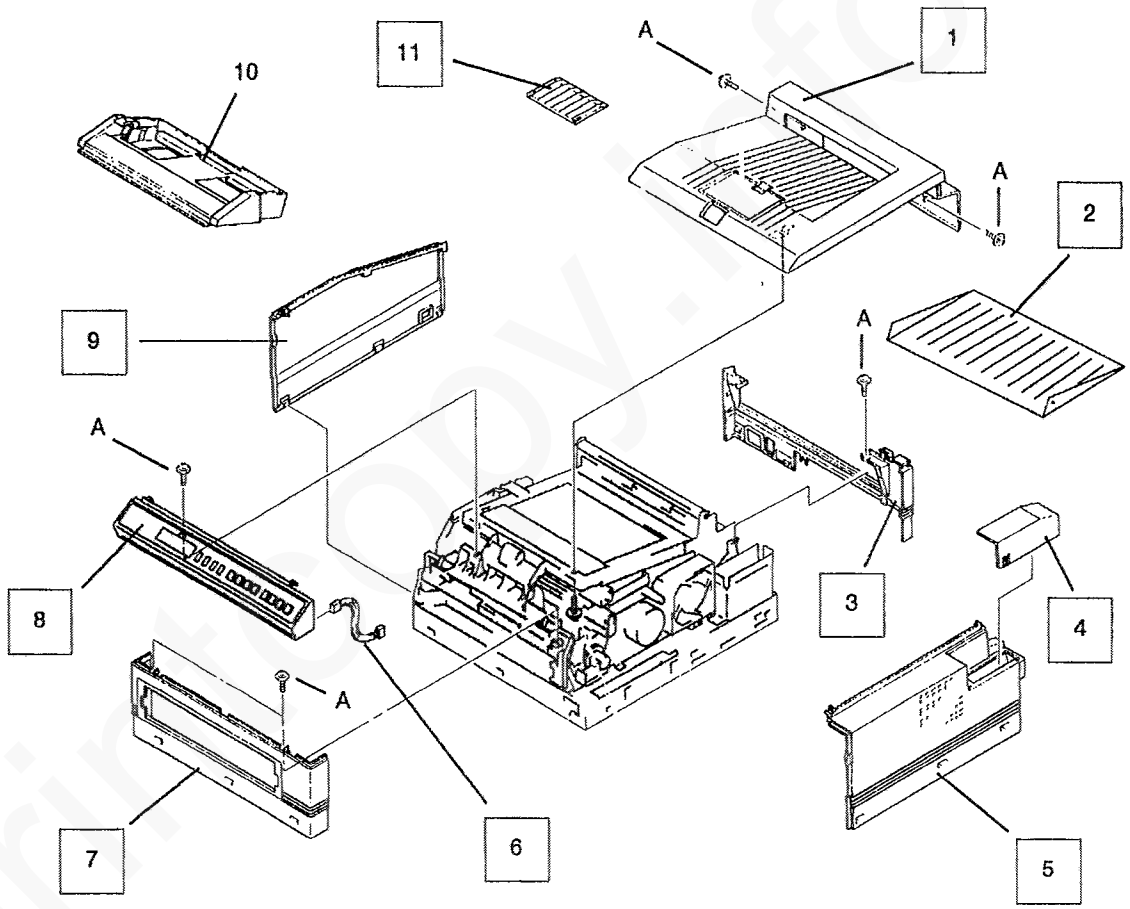
Item	Part	Description
1	101E07610	DEVELOPER ASSEMBLY (INC. INITIAL TONER
2	23E06870	TONER MOTOR BELT
3	130K51750	TONER MOTOR ASSEMBLY
D	26E30080	SCREW (P 3 x 8)
H	26E30120	SCREW (SMW 3 x 10)

Lubricants

No.	Part	Description
2	600T90393	OIL (TELLUS 68)
3	600T90429	SILICONE GREASE

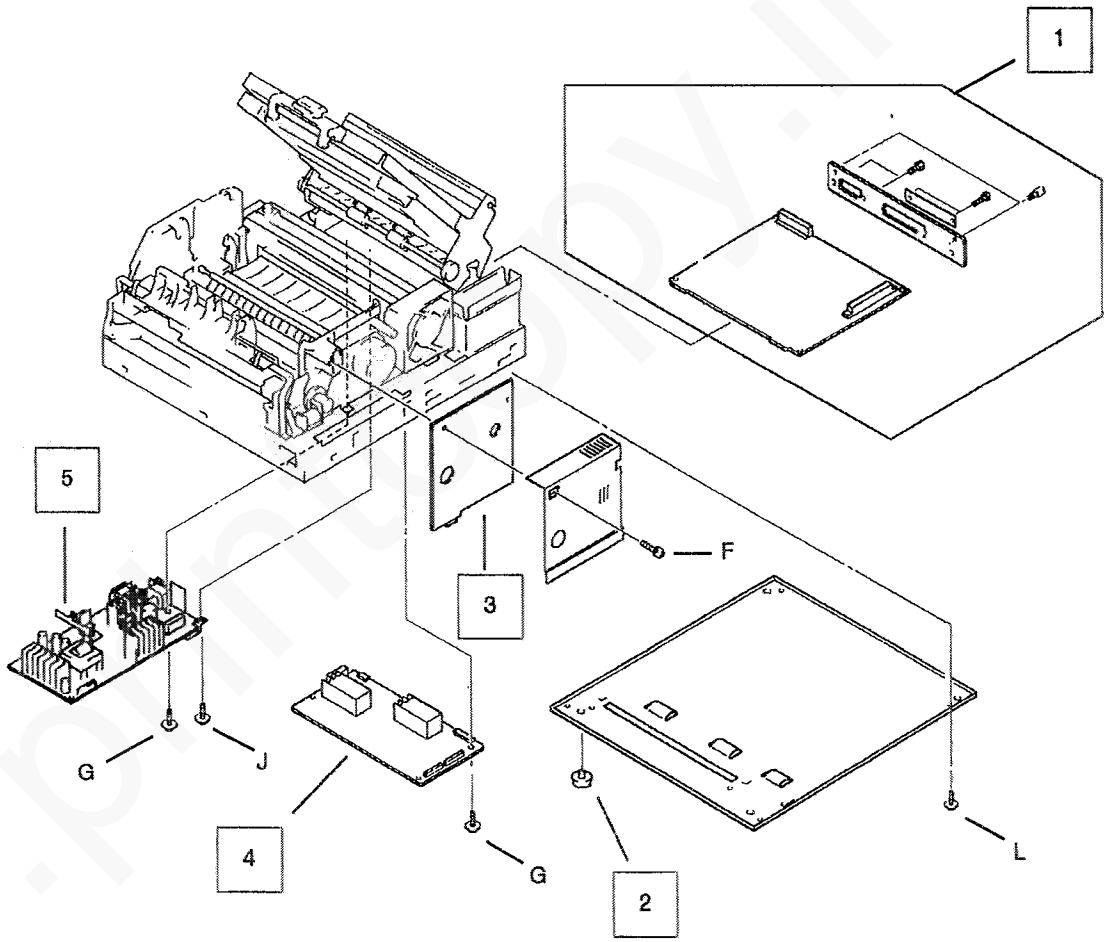
PL 3 Covers

Item	Part	Description
1	2K39980	TOP COVER ASSEMBLY
2	50E07890	FACE UP TRAY
3	2E38320	REAR COVER
4	2E38340	FONT CARTRIDGE COVER
5	2E38290	RIGHT SIDE COVER
6	152K40270	USER INTERFACE HARNESS
7	2E38310	FRONT COVER
8	2E38740	USER INTERFACE PANEL ASSY
9	2E38280	LEFT SIDE COVER
10	50E07880	INPUT PAPER CASSETTE
11	50E07960	LEGAL TRAY EXTENSION
A	26E27770	SCREW (FL 3 x 8)



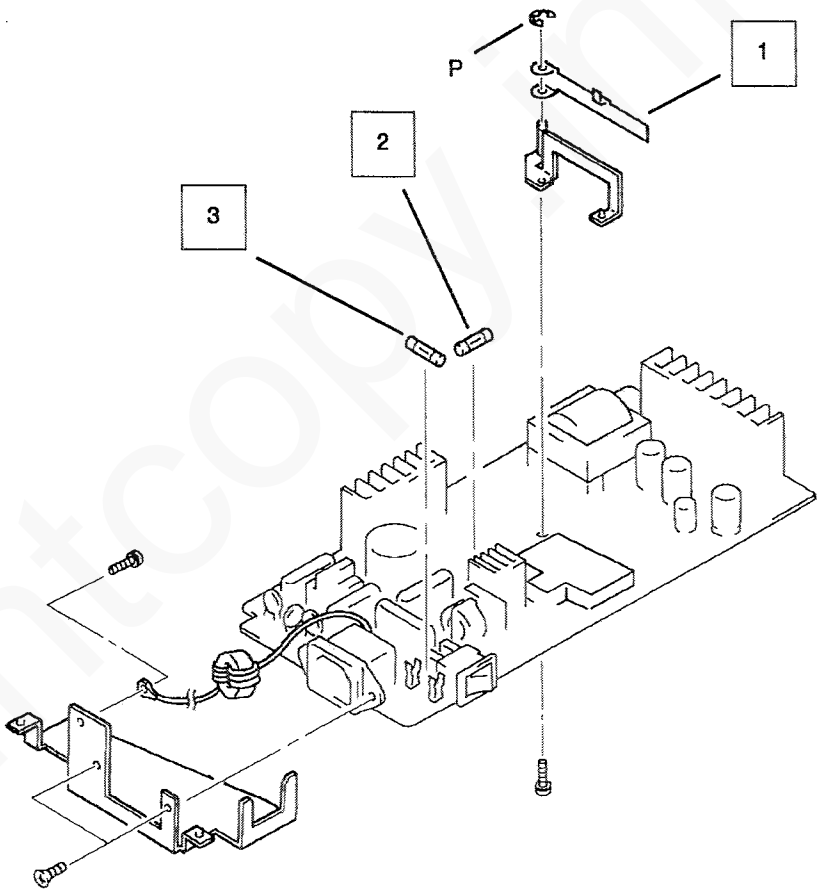
PL 4 PWB Assemblies

Item	Part	Description
1	140K37940	ESS CONTROLLER PWBA (WITHOUT EEPROMS)
2	17E04360	RUBBER FOOT
3	140K38110	IOT CONTROLLER PWBA
4	105E03150	HIGH VOLTAGE POWER SUPPLY
5	105E03140	LOW VOLTAGE POWER SUPPLY (220V)
5	105E03240	LOW VOLTAGE POWER SUPPLY (115V)
F	26E30100	SCREW (SM 3 x 8)
G	26E30110	SCREW (SMW 3 x 8)
J	26E30130	SCREW (SMW 4 x 8)
L	26E30150	SCREW



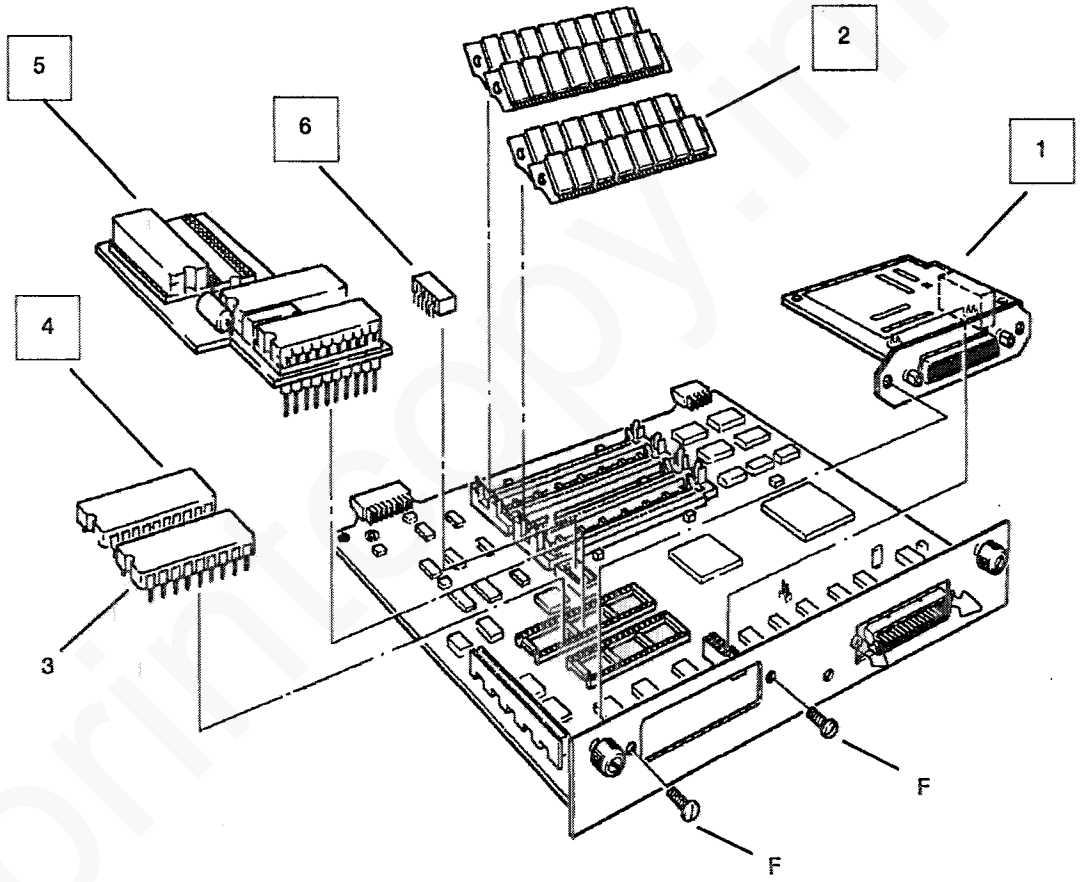
PL 5 Low Voltage Power Supply PWBA

Item	Part	Description
1	120E05830	INTERLOCK SWITCH ACTUATOR
2	108E01540	2A FUSE (220V)
2	108E01740	3.15A FUSE (115V)
3	108E01550	5A FUSE (220V)
3	108E01750	10A FUSE (115V)
P	28E08010	E-RING (E-6)

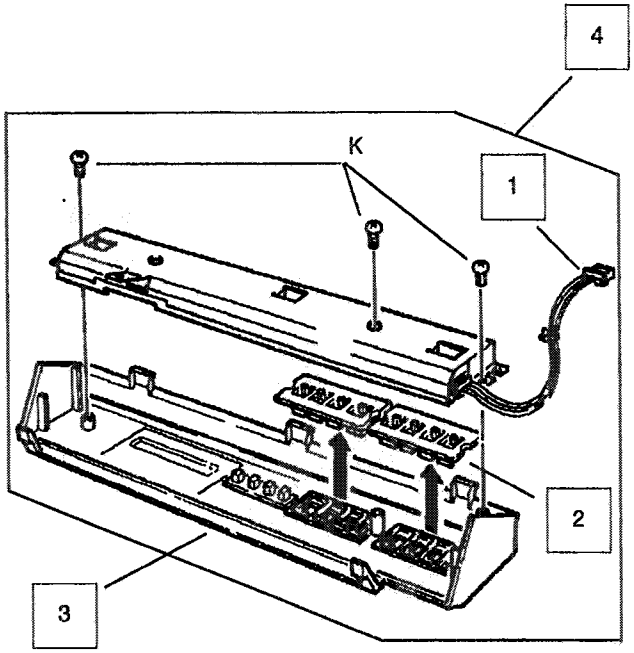


PL 6 ESS Controller PWBA

Item	Part	Description
1	140K39330	SERIAL COMMS PWBA
2	140K39340	1 MBYTE MEMORY SIMM PWBA
3	538E01430	PCL EPROM 1
3		PCL 5, 2M ROM 1
3		PCL 5 INTERIM ROM
4	538E01440	EMULATIONS ROM 2
4		PCL 5, 512K ROM 2
5		PCL 5 INTERIM DAUGHTER BOARD
6		PCL 5 PAL IC
F	113W54055	SCREW (M3 x 4)
		PCL 5 INTERIM KIT consists of items 5 (daughter board & 3 I/Cs) and 3 (1 I/C).
	9R92457	PCL 5 KIT (consists of items 3, 4 and 6.)

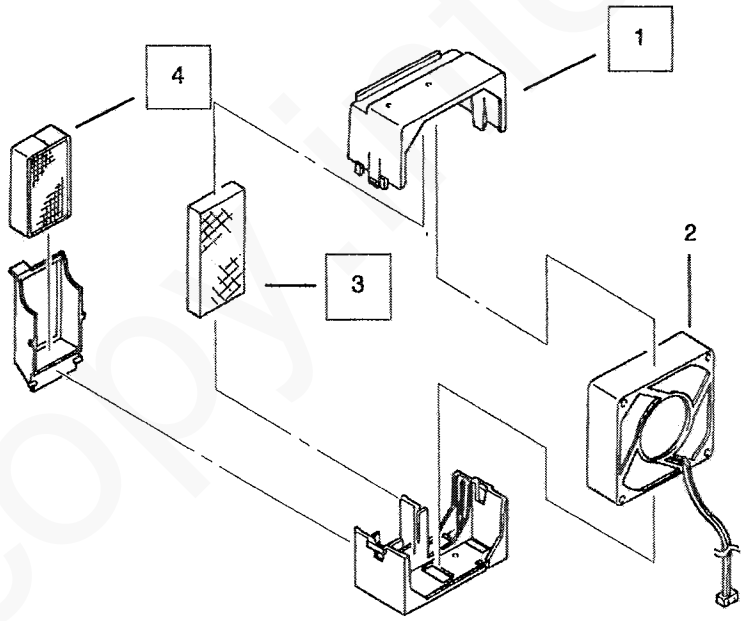


PL 7 User Interface



Item	Part	Description
1	152K40270	USER INTERFACE HARNESS
2	2E38750	PANEL KEY TOP
3	2E38330	USER INTERFACE COVER
4	2E38740	USER INTERFACE ASSY
K	26E30140	SCREW (T 2.6 x 6)

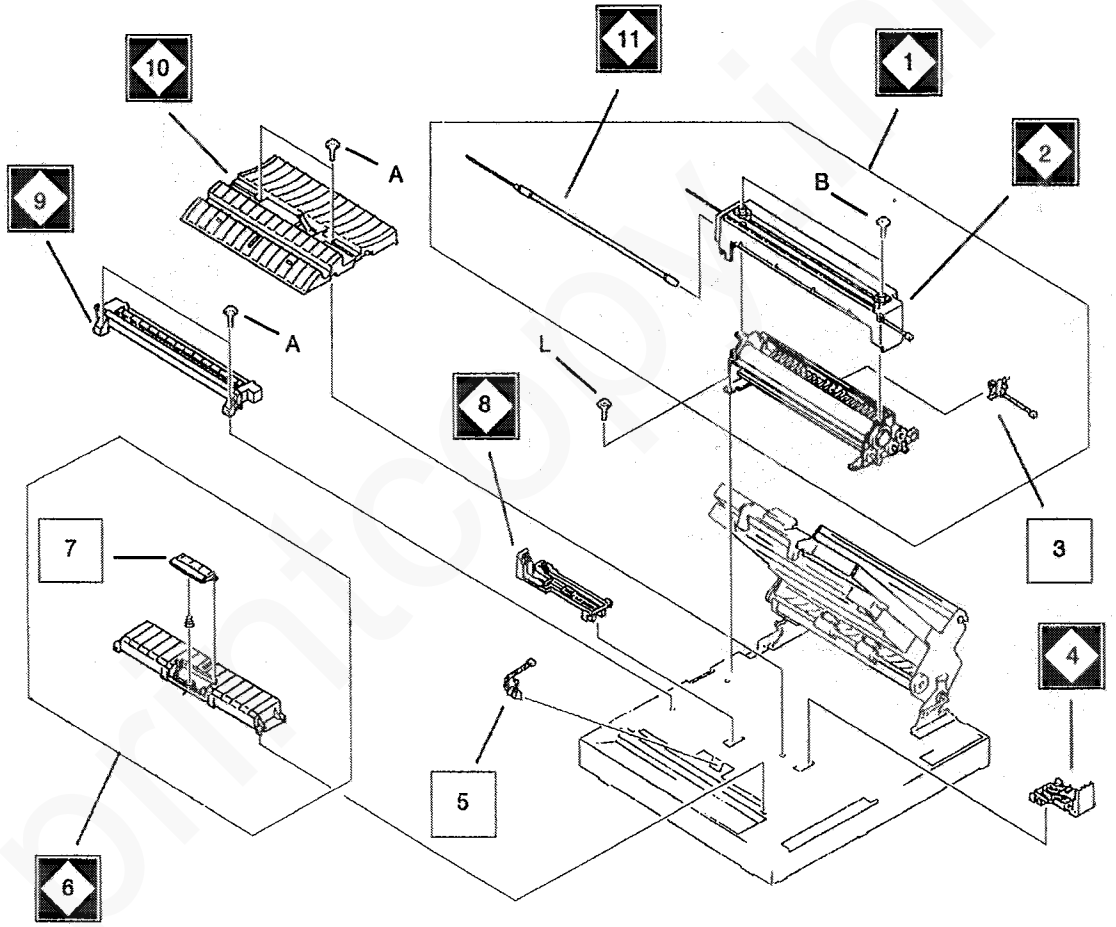
PL 8 Fan Assembly



Item	Part	Description
1	127EO7140	FAN ASSEMBLY
2	--	FAN
3	55E03330	OZONE FILTER B
4	53E02700	OZONE FILTER A

PL 9 Fusing, Corotrons and Paper Guides

Item	Part	Description
1	22E11560	FUSER ASSEMBLY (220V)
1	22E12220	FUSER ASSEMBLY (115V)
2	2K42170	FUSER COVER ASSEMBLY
3	130E05000	PAPER OUTPUT SWITCH
4	114E03290	RIGHT HIGH VOLTAGE CONNECTOR ASSEMBLY
5	130E05010	TIMING SENSOR
6	38K07770	FRONT PAPER GUIDE ASSEMBLY
7	38E10130	FRICTION PAD
8	114E03340	LEFT HIGH VOLTAGE CONNECTOR ASSEMBLY
9	113E08800	COROTRON ASSEMBLY
10	38E10250	LOWER PAPER GUIDE
11	24E01160	FUSER ROD (220V)
11	24E01770	FUSER ROD (115V)
A	26E27770	SCREW (FL 3 x 8)
B	26E27780	SCREW (FL 3 x 6)
L	26E30150	SCREW

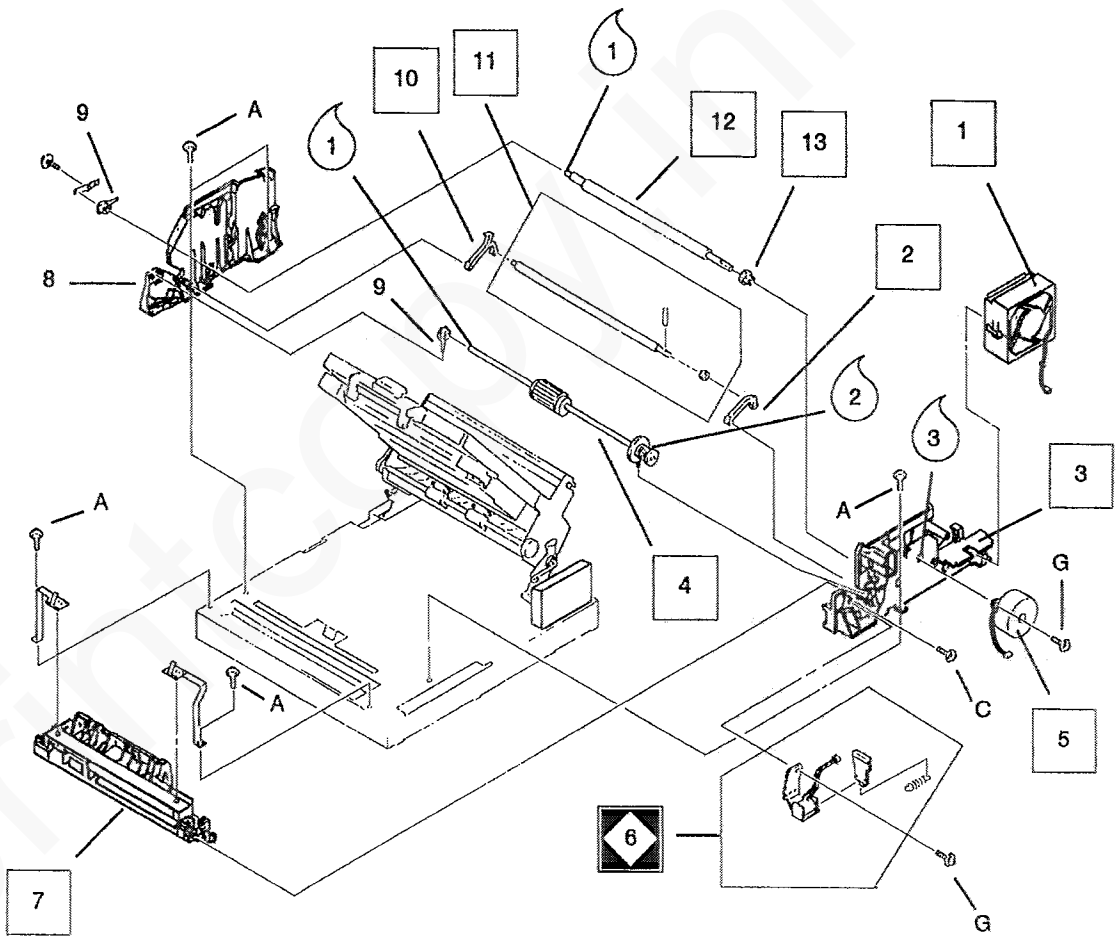


PL 10 Paper Feed

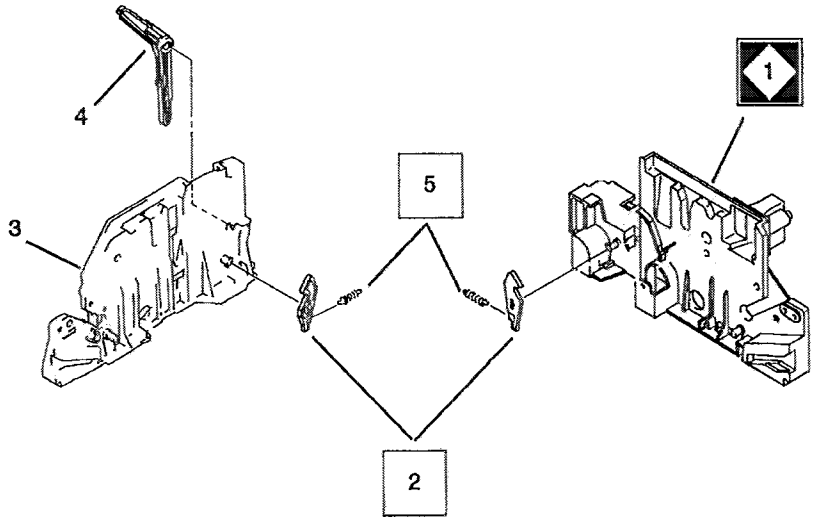
Item	Part	Description
1	127E07140	FAN ASSEMBLY
2	31E05600	RIGHT PINCH ROLLER ARM
3	1K22090	RIGHT SIDE FRAME ASSEMBLY
4	22E11570	CASSETTE FEED ROLLER UNIT
5	127E07130	DRIVE MOTOR
6	121E07450	CASSETTE FEED SOLENOID
7	--	FRONT FRAME
8	--	LEFT FRAME
9	13E07270	PLASTIC BEARING
10	31E05590	LEFT PINCH ROLLER ARM
11	22K11700	PINCH ROLLER ASSEMBLY
12	22E11710	PAPER FEED ROLLER
13	7E18920	PINCH ROLLER GEAR
A	26E27770	SCREW (FL 3 x 8)
C	26E30070	SCREW (FL 3 x 10)
G	26E30110	SCREW (SMW 3 x 8)

Lubricants

No.	Part	Description
1	70E110	CONDUCTIVE GREASE
2	600T90393	OIL (TELLUS 68)
3	600T90429	SILICONE GREASE

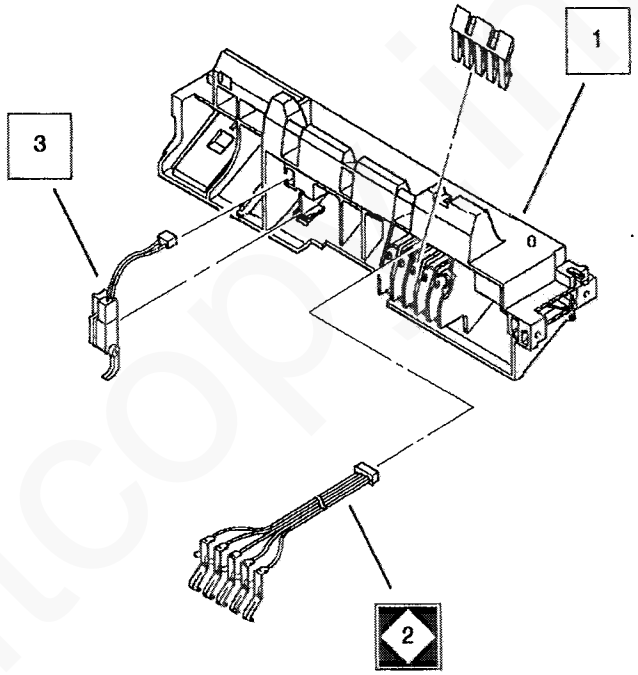


PL 11 Left and Right Frames



1	1K22090	RIGHT SIDE FRAME ASSEMBLY
2	11E03910	PRINT CARTRIDGE LEVER
3	--	LEFT SIDE FRAME
4	--	INTERLOCK SWITCH ACTUATOR ARM
5	9E35780	PRINT CARTRIDGE LEVER SPRING

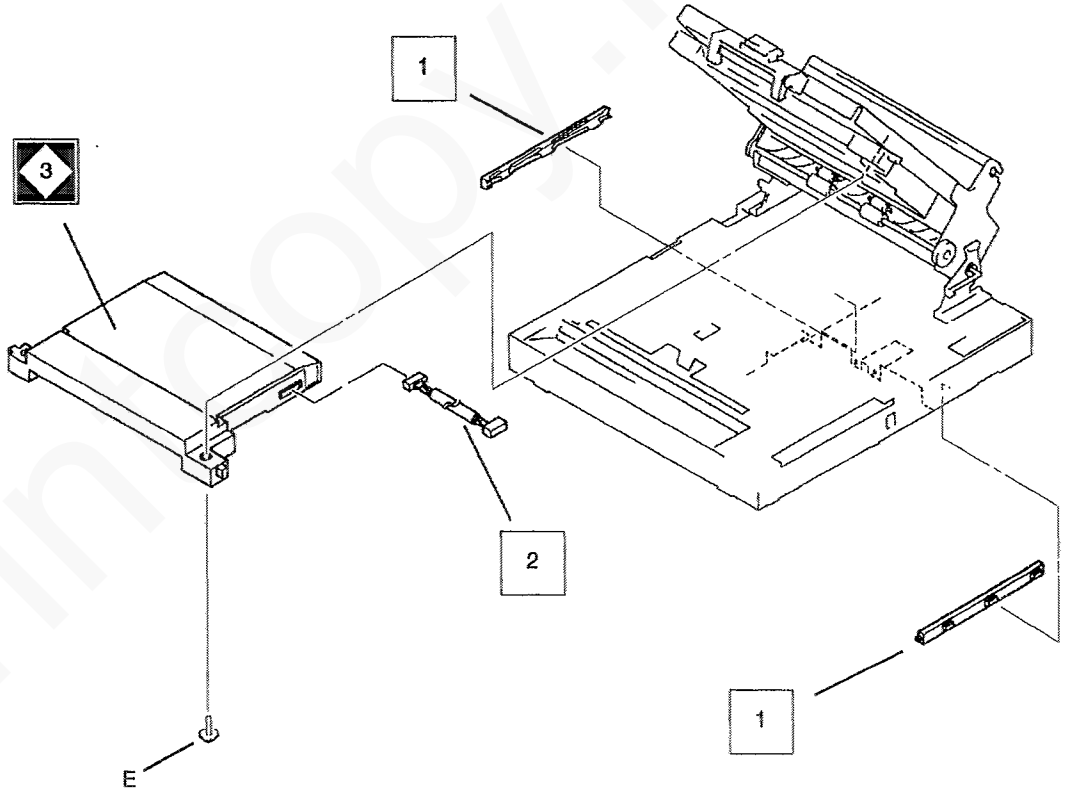
PL 12 Front Frame



Item	Part	Description
1	--	FRONT FRAME
2	116K00270	DEVELOPER UNIT TERMINAL ASSEMBLY
3	130E05020	INPUT PAPER SWITCH

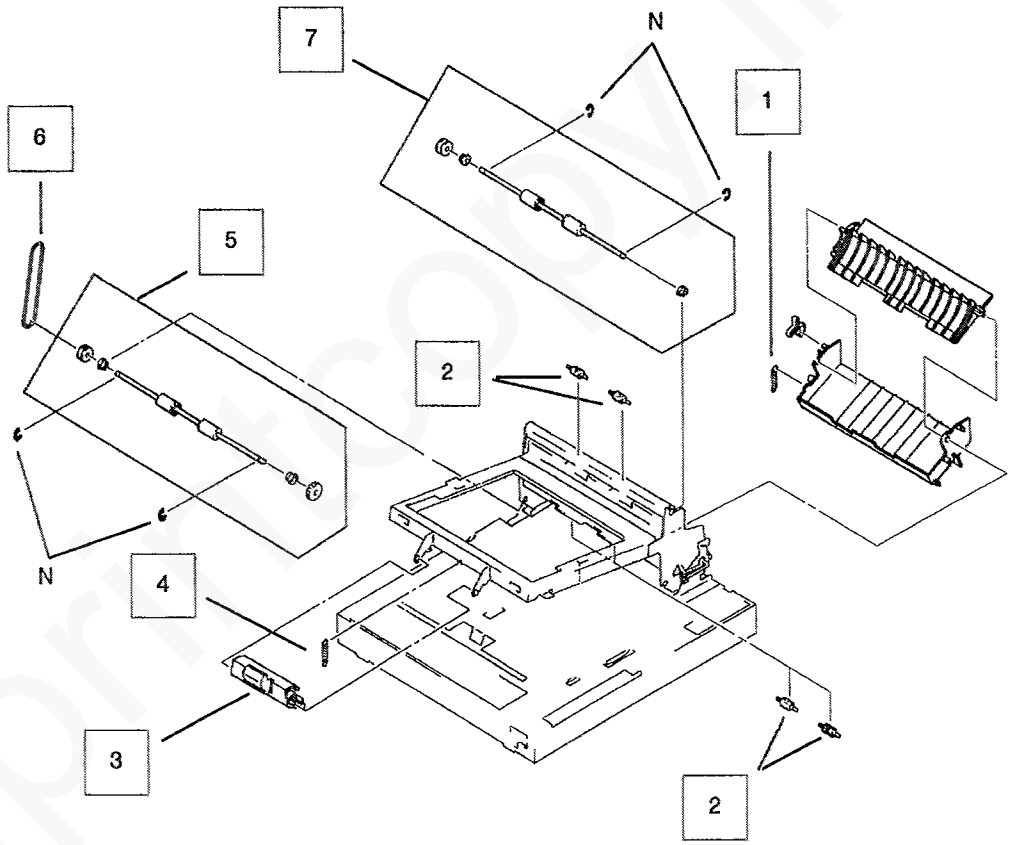
PL 13 Laser Scanner Unit

Item	Part	Description
1	1E20670	ESS GUIDE RAIL
2	152K40280	LASER SCANNER UNIT HARNESS
3	122E01390	LASER SCANNER UNIT
E	26E30090	SCREW & SPACER



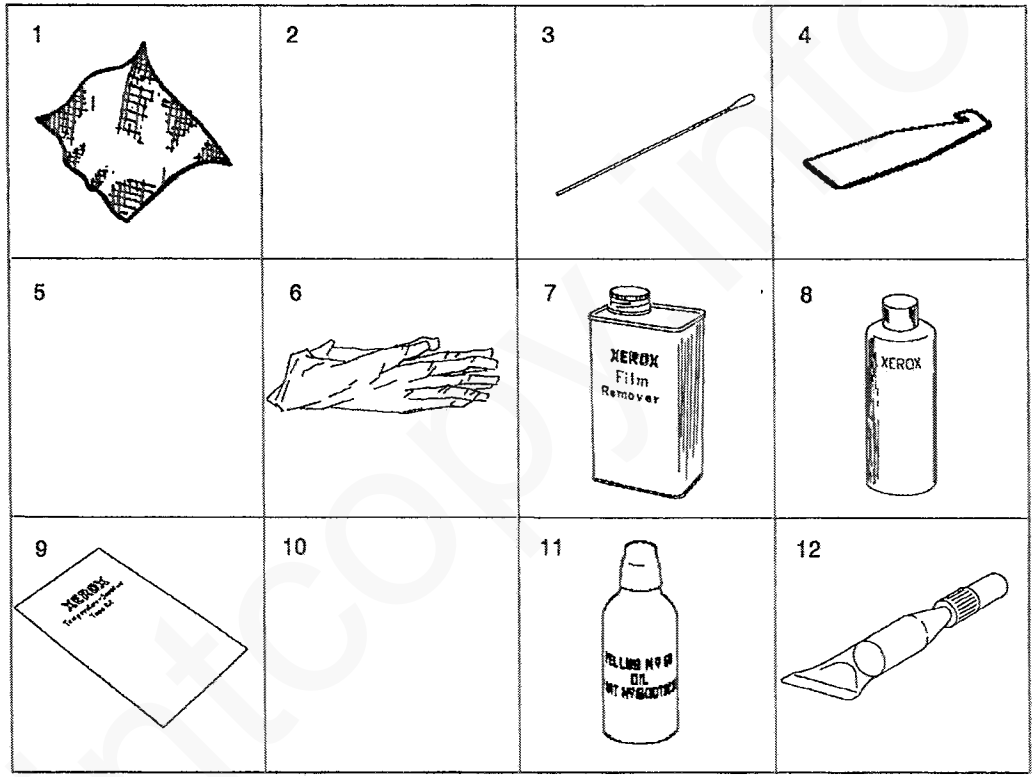
PL 14 Opening Latch and Paper Output

Item	Part	Description
1	9E35770	DIVERT GATE SPRING
2	22E11580	OUTPUT ROLLER
3	2E38300	OPENING LATCH ASSEMBLY
4	9E35760	OPENING LATCH SPRING
5	22K19180	EXIT ROLLER ASSEMBLY (LOWER)
6	23E06880	EXIT ROLLER BELT
7	22K19190	EXIT ROLLER ASSEMBLY (UPPER)
N	28E08000	E-RING (E-4)



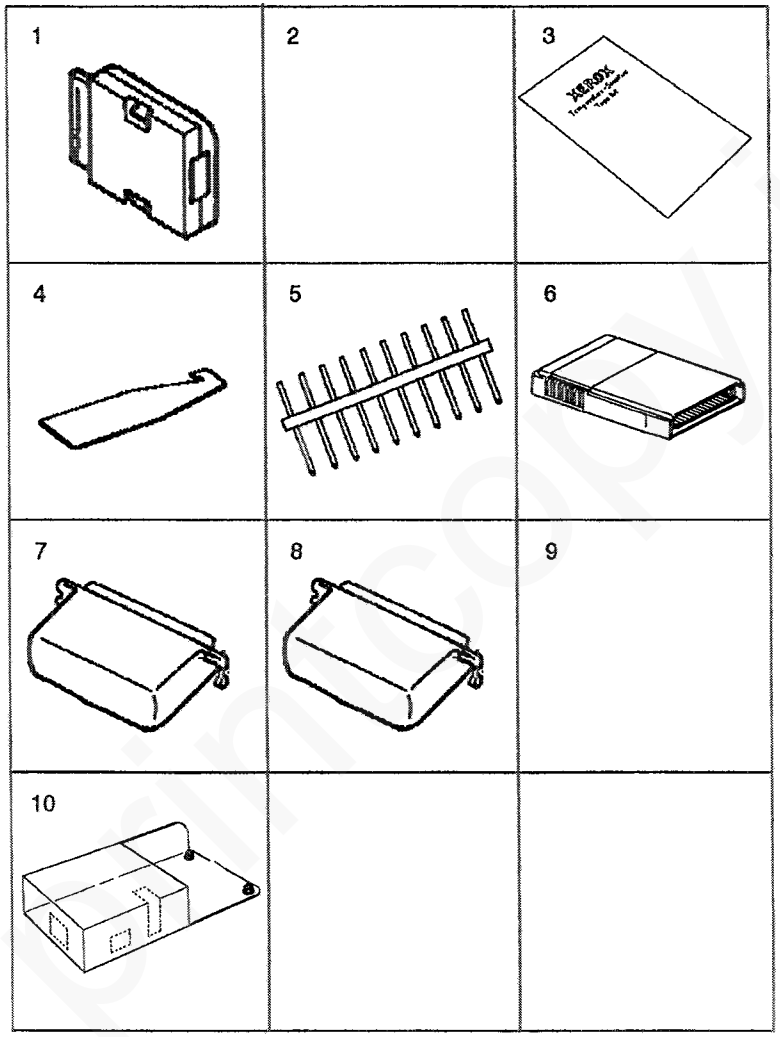
PL 15 Consumables

Item	Part	Description
1	8R90019	CLEANING CLOTH
2	600S4372	LINT FREE CLOTH
3	35P2162	COTTON SWABS
4	600T91811	MYLAR SCRAPER
5	43P67	CLEANING SACHET
6	8R90021	PLASTIC GLOVES
7	43P45	FILM REMOVER
8	8R90176	GENERAL CLEANING SOLVENT
9	600T90855	TEMPERATURE TAPE
10	70E110	CONDUCTIVE GREASE
11	600T90393	OIL (TELLUS 68)
12	600T90429	SILICONE GREASE



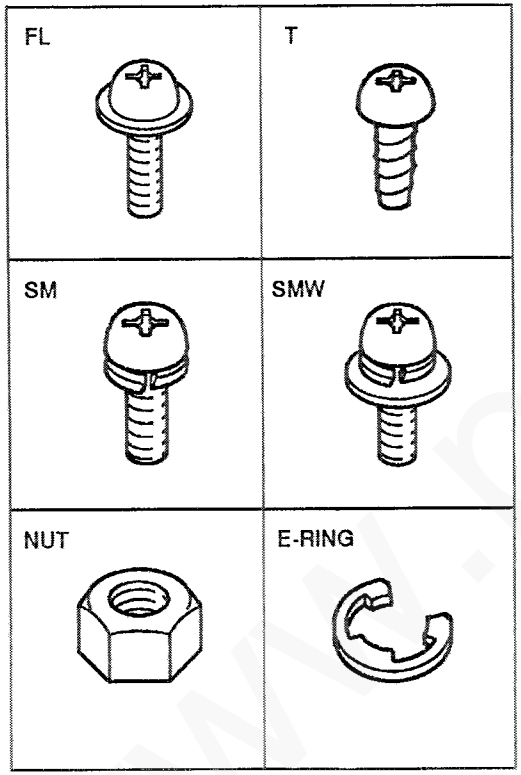
PL 16 Tools

Item	Part	Description
1	600T91808	SERVICE PRINT COUNTER
2	600T91089	INTERLOCK CHEATER
3	600T90855	TEMPERATURE TAPE
4	600T91811	MYLAR SCRAPER
5	600T91810	10 WAY PS CONNECTOR TOOL
6	600T91812	DIAGNOSTICS CARTRIDGE
7	600T80135	SERIAL LOOPBACK TOOL
8	600T80136	PARALLEL LOOPBACK TOOL
9	600T91815	7 WAY IOTC CONNECTOR TOOL
10	600T91821	POWER SUPPLY SAFETY SHROUD



Common Hardware

Item	Part	Description
--	600K32120	COMMON HARDWARE KIT
A	26E27770	SCREW (FL 3 x 8)
B	26E27780	SCREW (FL 3 x 6)
C	26E30070	SCREW (FL 3 x 10)
D	26E30080	SCREW (P 3 x 8)
E	26E30090	SCREW (FL x) & SPACER
F	26E30100	SCREW (SM 3 x 8)
G	26E30110	SCREW (SMW 3 x8)
H	26E30120	SCREW (SMW 3 x 10)
J	26E30130	SCREW (SMW 4 x 8)
K	26E300140	SCREW (T 2.6 x 6)
L	26E30150	SCREW (SM)
M	201W00355	NUT (M3)
N	28E08000	E-RING (E-4)
P	28E08010	E-RING (E-6)



Part Number Index

Notes

6. General Procedures and Information

Introduction

This section contains general procedures, to assist you in configuring and testing the printer. This section also gives the specifications, tools, supplies, and the Change Tag/MOD index of the printer.

The Multinational User Interface

The buttons on the User Interface are labeled using either the English term for their function (USO, XLA) or multinational symbols (RX, XLA, XCL). The following table lists the English terms and their multinational equivalents.

Table 1. User Interface Buttons

English	Multinational Symbol
Menu	
Up	
Down	
Enter	
Reset / Continue	
Test	
Last Page	
On Line	

GP 1.1
Printer Configuration (pre PCL 5)

Use the following procedure to select the desired printer configuration options, or to reset the configuration to the factory defaults. A set of printer configuration options can be saved for each printer emulation. Table 1 identifies the user interface buttons and their functions during this procedure. Table 2 shows the Laserjet II printer configuration menu, User Interface display and menu options.

NOTE: Any Emulation Selection made using this configuration procedure will only be effective until the printer power is switched off; perform GP 1.2 to change the 'Power Up Emulation'. It is only possible to install and select a page description language if at least 2 MBytes of additional memory is installed.

Initial Actions

Print a status sheet (GP 2) and retain it as a reference showing the printer configurations prior to the service call.

Procedure

1. Switch on the printer power.
2. Press the ONLINE ⊢ button to switch the printer OFF LINE; the ON LINE LED will go off.
3. Press the MENU ⊟ button momentarily; the User Interface will display the message "EMULATION = LJII" (the first item in the printer configuration menu).
4. Select the desired setting using the DOWN ▼ button (to scroll down) and the UP ▲ button (to scroll up); press the ENTER ✳ button to select the desired setting.
5. Press the MENU ⊟ button momentarily to display the next menu item on the User Interface.
6. Select the desired setting using the DOWN ▼ button (to scroll down) and the UP ▲ button (to scroll up); press the ENTER ✳ button to select the desired setting.
7. Repeat steps 5. and 6. until all of the settings are correct.
8. When the User Interface displays the message "SAVE CONFIG." you can select either ENTER ✳ (to save the configuration settings) or RESET/CONTINUE <> (to reset the printer settings to the factory defaults).

NOTE: When a page description language (IS/2 or XS/3) is selected, the display will go blank for several minutes while the emulation fonts are downloaded.

9. If the MENU ⊟ button is pressed after the "SAVE CONFIG." step in the menu, the printer will return to the start of the printer configuration menu.
10. Press the ONLINE ⊢ button to exit from the printer configuration menu.
11. Switch the printer power off for approximately one minute, then switch the power on again. Print a status sheet (GP 2). **The settings you selected appear on the status sheet.**

    Y N

    The printer has not saved the configuration settings. Go to OF 5 RAP.

The printer has saved your selected configuration settings.

User Interface button	Function
MENU	Steps to the next configuration setting.
UP	Scrolls up through the setting options.
DOWN	Scrolls down through the setting options.
ENTER	Selects the setting option. Saves options at end of sequence.
RESET/CONTINUE	Resets the setting option to factory defaults.
TEST	Unused.
LAST PAGE	Unused.
ON LINE	Returns the printer ON LINE.

Table 1. Selecting printer configuration options

Printer Choice	User Interface Display	Menu Options
Emulation Select	EMULATION = **LJII**	**LJII, D630, FX80, PPII**
Number of Copies	COPIES = **01**	**01, 02 .... 99**
Symbol Set Selection	SYM SET = **ROMAN-8**	**ROMAN-8, ECMA-94, IBM-US, IBM-DN, ISO xx, GERMAN & SPANISH**
Font Select	FONT SOURCE = **I**	**I, F, or D**
Font Select	FONT NUMBER = **001**	**001, 002 .... 999**
Paper Source	FEED = **TRAY 1**	**TRAY 1, TRAY 2** or **MANUAL**
Form Length	FORM = **070** LINES	**005, 006 .... 128**
Bitmap Type	BITMAP = **PART**	**FULL** or **PART**
Auto Line Feed	AUTO LF = **OFF**	**ON** or **OFF**
Auto CR	AUTO CR = **OFF**	**ON** or **OFF**
Auto Page Eject Time	AUTO PE = **OFF**	**05, 10, xxx, 250** or **OFF**
Internal F Cartridge	'F' FONTS = **OFF**	**ON** or **OFF**
Save Config.	**SAVE** XXXX SETUP	**SAVE** or **RESET**
	*NOTE: THE DEFAULT SETTING IS SHOWN IN **BOLD** TEXT.*	*NOTE: THE OPTIONS ARE SHOWN IN **BOLD** TEXT.*

Table 2. Printer configuration settings

GP 1.2
System Configuration (pre PCL 5)

Use the following procedure to select the desired system configuration options, or to reset the configuration to the factory defaults. Table 1 identifies the user interface buttons and their functions during this procedure. Table 2 shows the system configuration menu, User Interface display and menu options.

NOTE: There is only one set of system configurations, which are applied to all printer emulations.

Initial Actions

Print a status sheet (GP 2) and retain it as a reference showing the system configurations prior to the service call.

Procedure

1. Switch on the printer power.
2. Press the ONLINE ⊦ button to switch the printer OFF LINE; the ON LINE LED will go off.
3. Press the MENU ⊟ button and hold it down for at least five seconds, then release it; the User Interface will display the message "ENGLISH" (the first item in the system configuration menu).
4. Select the desired setting using the DOWN ▼ button (to scroll down) and the UP ▲ button (to scroll up); press the ENTER ✳ button to select the desired setting.
5. Press the MENU ⊟ button momentarily to display the next menu item on the User Interface.
6. Select the desired setting using the DOWN ▼ button (to scroll down) and the UP ▲ button (to scroll up); press the ENTER ✳ button to select the desired setting.
7. Repeat steps 5. and 6. until all of the settings are correct.
8. When the User Interface displays the message "SAVE SETUP" you can select either ENTER ✳ (to save the configuration settings) or RESET/CONTINUE <> (to reset the system settings to the factory defaults).

NOTE: When a page description language (IS/2 or XS/3) is selected, the display will go blank for several minutes while the emulation fonts are downloaded.

9. If the MENU ⊟ button is pressed after the "SAVE SETUP" step in the menu, the printer will return to the start of the system configuration menu.
10. Press the ONLINE ⊦ button to exit from the system configuration menu.
11. Switch the printer power off for approximately one minute, then switch the power on again. Print a status sheet (GP 2). **The settings you selected appear on the status sheet.**

    Y N

    The printer has not saved the configuration settings. Go to OF 5 RAP.

    The printer has saved your selected configuration settings.

User Interface button	Function
MENU	Steps to the next configuration setting.
UP	Scrolls up through the setting options.
DOWN	Scrolls down through the setting options.
ENTER	Selects the setting option. Saves options at end of sequence.
RESET/CONTINUE	Resets the setting option to factory defaults.
TEST	Unused.
LAST PAGE	Unused.
ON LINE	Returns the printer ON LINE.

Table 1. Selecting system configuration options.

Printer Choice	User Interface Display	Menu Options	Option Required
Language	**ENGLISH**	**ENGLISH, DEUTSCH, FRANCAIS, ESPANOL** or **ITALIANO**	
Auto Tray Switching	TRAY 1 SIZE = **A4**	**A4, A5, LTR, LGL, C5, DL, COM** or **MON**	
Auto Tray Switching	TRAY 2 SIZE = **A4**	**A4** or **LTR**	2nd Tray
Auto Continue	AUTO CONT = **OFF**	**ON** or **OFF**	
Escape Mode	ESCAPE MODE = **OFF**	**ON** or **OFF**	
Auto Tray Switching	THICK PAPER = **OFF**	**ON** or **OFF**	
Data Monitor	DM MODE = **OFF**	**ON** or **OFF**	
Power Up Emulation	DEFAULT = **LJII**	**LJII, D630, FX80, PPII, HPGL, XES, IS2** or **XS3**	Emulation EPROM or Postscript Cartridge
Wide Print	WIDE PRINT = **ON**	**ON** or **OFF**	
Print Density	PRINT DENSITY = **3**	**1, 2, 3, 4** or **5**	
Host I / F	I / F = **PARALLEL**	**PARALLEL, SERIAL** or **BOTH**	
I / F Timing	I / F TIMING = **B**	**A, B,** or **C**	
Serial Type	STANDARD = **RS232C**	**RS232C**	Serial Board
Protocols	PROTOCOL = **XON**	**XON, ROBUST** or **OFF**	Serial Board
Baud Rate	BAUD RATE = **9600**	**300, 600, 1200, 2400, 4800, 9600** or **19200**	Serial Board
Parity	PARITY = **NONE**	**EVEN, ODD** or **NONE**	Serial Board
Data Size	DATA BITS = **8**	**7** or **8**	Serial Board
Stop Bits	STOP BITS = **1**	**1** or **2**	Serial Board
DTR Type	DTR POLARITY = **HI**	**HI** or **LO**	Serial Board
Save Setup	**SAVE** SETUP	**SAVE** or **RESET**	
	*NOTE: THE DEFAULT SETTING IS SHOWN IN **BOLD** TEXT.*	NOTE: THE OPTIONS ARE SHOWN IN ***BOLD*** *TEXT.*	

Table 2. System configuration settings.

GP 1-3
Printer Configuration PCL 5

PCL 5 uses 3 main menus:- EMULATION, SYSTEM and COMMUNICATIONS. They are grouped together and listed as the "TOP MENU".

From this TOP MENU can be selected the desired printer options, or the options can be reset back to the factory defaults.

Table 1. shows the structure of the 4010 PCL 5 Menu Tree.

Use the following procedures to select:

GP 1.3a. The Printer Emulation (PCL 5).

GP 1.3b. The System configuration (PCL 5).

GP 1.3c. The Communications settings (PCL 5).

GP 1-3a
Emulation (PCL 5)

Initial Actions

Print a status sheet (GP 2) and retain it as a reference showing the printer configuration prior to the service call.

Procedure

1. Switch on the printer power.
2. Press the ONLINE ↦ button to switch the printer OFF LINE; the ONLINE LED will go off.
3. Press MENU ☰ button momentarily; the User Interface will display the message "EMULATION".
4. Press ENTER ✳ button; display will read "EMULATION = LJ 3*" (* indicates default selection).
5. Press MENU ☰ repeatedly untill the option required is displayed (see Table 3).
6. Press DOWN ▼ button to scroll down, or UP ▲ button to scroll up to select the desired setting.
7. Press ENTER ✳ button to select the setting displayed.
8. Repeat steps 5, 6 and 7 untill all options are set as required.
9. Press MENU ☰ button repeatedly untill "SAVE LJ 3" is displayed.
10. Press ENTER ✳ button to save all settings selected for Emulation Configuration.
11. Press ONLINE ↦ button to exit EMULATION menu and return to ON LINE (ONLINE LED lit).
12. Switch printer off for one minute, then switch power back on again and print a status sheet (GP 2).

The settings you selected appear on the status sheet.

Y N

N: The printer has not saved the new configuration settings. Go to OF5 RAP.

Y: The printer has saved the new configuration settings.

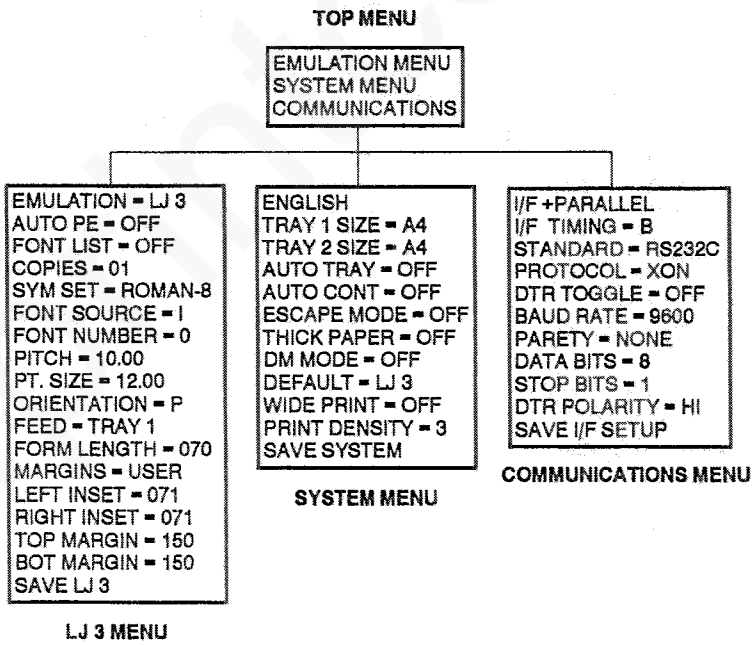


Table 1. PCL 5 Menu Tree.

User Interface button	Function
MENU	Steps to next item in menu
UP	Scrolls up through the setting options.
DOWN	Scrolls down through the setting options.
ENTER	Selects the TOP MENU item. Saves options at end of sequence.
RESET/CONTINUE	Resets the setting option to factory defaults.
ONLINE	Takes printer off, or returns printer to, ON LINE.

Table 2. Selecting printer configuration options.

Printer Display	Menu Options
EMULATION = LJ3*	LJ 3, D630, FX80, PPII, HPGL, XES.
AUTO PE = OFF*	SEE USER GUIDE.
FONT LIST = OFF*	ON or OFF.
COPIES = 01*	01 to 99.
SYM SET = ROMAN-8*	SEE USER GUIDE.
FONT SOURCE = I*	NO OPTION
FONT NUMBER = 0*	0 to 49.
PITCH = 10.00*	SEE USER GUIDE.
PT. SIZE = 12.00*	SEE USER GUIDE.
ORIENTATION = P*	P or L.
FEED = TRAY 1*	1, 2 or MANUAL.
FORM LENGTH = 070*	SEE USER GUIDE
MARGINS = USER*	OFF, LJ 3, ZERO, USER.
LEFT INSET = 071*	SEE USER GUIDE.
RIGHT INSET = 071*	SEE USER GUIDE
TOP MARGIN = 150*	SEE GUIDE.
BOT MARGIN = 150*	SEE USER GUIDE.
SAVE LJ 3	SAVE or RESET

Table 3. Emulation Menu Listings.

SYSTEM CONFIGURATION (PCL 5)

Use the following procedure to select the desired system configuration options (see Table 1. System Menu Listings) or to reset the configurations to the factory defaults.

Initial Actions

Print a status sheet (GP 2) and retain it as a reference showing the system configuration prior to the service call.

Procedure

1. Switch on the printer power.
2. Press the ONLINE ⊢→ button to switch the printer OFFLINE; the ONLINE LED will go off.
3. Press MENU ☰ button twice; the User Interface will display the message "EMULATION" then "SYSTEM".
4. Press ENTER ✳ button; display will read "ENGLISH*", the first item in the System Menu (* indicates default selection).
5. Press MENU ☰ repeatedly untill the option required is displayed.
6. Press DOWN ▼ button to scroll down, or UP ▲ button to scroll up to select the desired setting.
7. Press ENTER ✳ button to select the setting displayed.
8. Repeat steps 5, 6 and 7 untill all options are set as required.
9. Press MENU ☰ button repeatedly untill "SAVE SYSTEM" is displayed.
10. Press ENTER ✳ button to save all settings selected for System Configuration.
11. Press ONLINE ⊢→ button to exit System Menu and return to online (ONLINE LED lit).
12. Switch printer off for one minute, then switch power back on again and print a status sheet (GP 2).

The settings you selected appear on the status sheet.

Y **N**

The printer has not saved the new configuration settings. Go to OF5 RAP.

The printer has saved the new configuration settings.

Printer Display	Menu Options
ENGLISH	ENGLISH, DEUTSCH, FRANCAIS, ESPANOL, ITALIANO.
TRAY 1 SIZE = A4*	A4, A5, LTR, LGL, MON, COM, DL, C5.
TRAY 2 SIZE = A4*	A4 or LTR.
AUTO TRAY = OFF*	OFF or ON.
AUTO CONT = OFF	ON or OFF.
ESCAPE MODE = OFF*	ON or OFF.
THICK PAPER = OFF*	ON or OFF
DM MODE = OFF*	ON or OFF.
DEFAULT = LJ 3*	LJ 3, D630, FX80, PPII, HPGL, XES.
WIDE PRINT = OFF*	ON or OFF.
PRINT DENSITY = 3*	1, 2, 3, 4 or 5.
SAVE SYSTEM	SAVE or RESET.

Table 1. System Menu Listings.

User Interface button	Function
MENU	Steps to next item in menu.
UP	Scrolls up through the setting options.
DOWN	Scrolls down through the setting options
ENTER	Selects the TOP MENU item. Saves options at end of sequence.
RESET/CONTINUE	resets the setting option to factory defaults.
ONLINE	Takes printer off, or returns printer to, ONLINE.

Table 2. Selecting printer configuration options.

COMMUNICATIONS CONFIGURATION (PCL 5)

Use the following procedure to select the desired Communications configuration options (see Table 1. Communications Menu Listings) or to reset the configurations to the factory defaults.

Initial Actions

Print a status sheet (GP 2) and retain it as a reference showing the communications configuration prior to the service call.

Procedure

1. Switch on the printer power.
2. Press the ONLINE ⊢ button to switch the printer OFF LINE; the ONLINE LED will go off.
3. Press MENU ☰ button three times; the User Interface will display the message "EMULATION", "SYSTEM", then "COMMUNICATIONS".
4. Press ENTER ✳ button; display will read "I/F = PARALLEL*", the first item in the Communications menu (* indicates default selection).
5. Press MENU ☰ repeatedly untill the option required is displayed.
6. Press DOWN ▼ button to scroll down, or UP ▲ button to scroll up to select the desired setting.
7. Press ENTER ✳ button to select the setting displayed.
8. Repeat steps 5, 6 and 7 untill all options are set as required.
9. Press MENU ☰ button repeatedly untill "SAVE I/F SETUP" is displayed.
10. Press ENTER ✳ button to save all settings selected for Communications configuration.
11. Press ONLINE ⊢ button to exit Communications menu and return to ON LINE (ONLINE LED lit).
12. Switch printer off for one minute, then switch power back on again and print a status sheet (GP 2).

The settings you selected appear on the status sheet.

Y N

The printer has not saved the new configuration settings. Go to OF5 RAP.

The printer has saved the new configuration settings.

Printer Display	Menu Options
I/F = PARALLEL*	PARALLEL, SERIAL or BOTH.
I/F TIMING = B*	A, B or C.
STANDARD = RS232C*	RS232C.
PROTOCOL = XON*	XON, ROBUST or OFF.
DTR TOGGLE = ON*	ON or OFF.
BAUD RATE = 9600*	300, 600, 1200, 2400, 9600 or 19200.
PARITY = NONE*	ODD, EVEN or NONE.
DATA BITS = 8*	7 or 8.
STOP BITS = 1*	1 or 2.
DTR POLARITY = HI*	HI or LO.
SAVE I/F SETUP*	SAVE or RESET.

Table 1. Communications Menu Listings.

User Interface button	Function
MENU	Steps to next item in menu.
UP	Scrolls up through the setting options.
DOWN	Scrolls down through the setting options.
ENTER	Selects the TOP MENU item. Saves options at end of sequence.
RESET/CONTINUE	Resets the setting option to factory defaults.
ONLINE	Takes printer off, or returns printer to, ON LINE.

Table 2. Selecting printer configuration options.

GP 2
Status Sheet

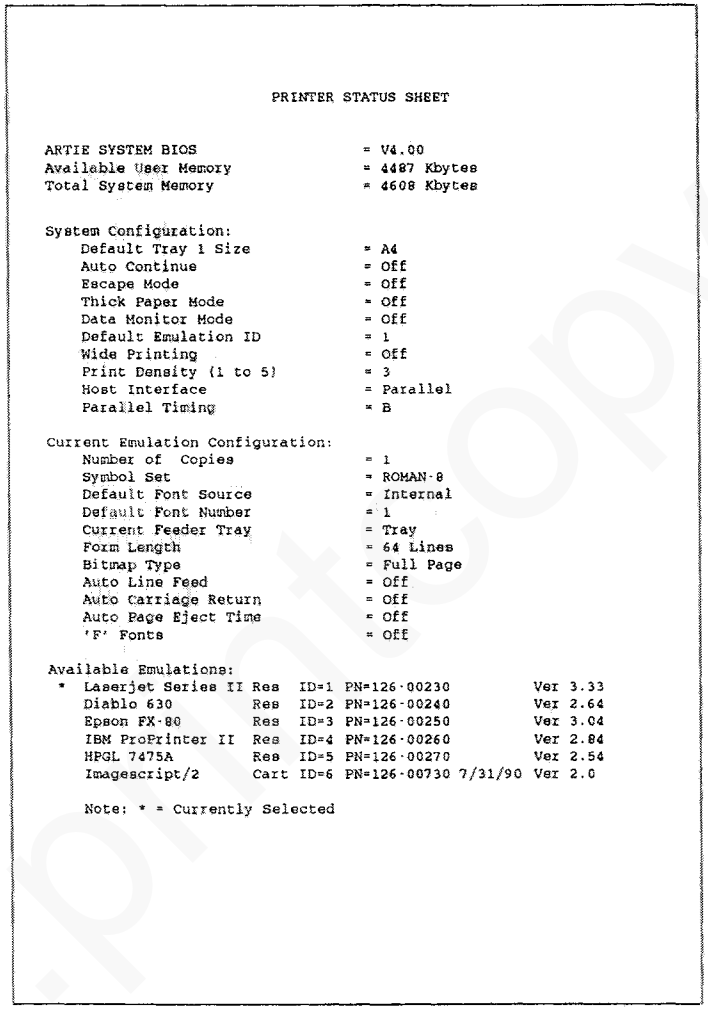
The status sheet (Figure 1) provides the following information:

- Software release and revision levels
- Printer configuration and default settings
- Emulations available and power up emulation
- Fonts available and default font selected
- Total and available memory
- Emulations available and power up emulation.

Generate a status sheet to verify the configuration of the printer.

Procedure

1. Switch on the printer power.
2. Press the ONLINE ↦ button to switch the printer off line; the ON LINE LED will go off.
3. Press the TEST ☾ button momentarily; the User Interface will display the message "PRINTING STATUS" and a Status Sheet will be produced.



```
                        PRINTER STATUS SHEET


ARTIE SYSTEM BIOS                  = V4.00
Available User Memory              = 4487 Kbytes
Total System Memory                = 4608 Kbytes


System Configuration:
    Default Tray 1 Size            = A4
    Auto Continue                  = Off
    Escape Mode                    = Off
    Thick Paper Mode               = Off
    Data Monitor Mode              = Off
    Default Emulation ID           = 1
    Wide Printing                  = Off
    Print Density (1 to 5)         = 3
    Host Interface                 = Parallel
    Parallel Timing                = B

Current Emulation Configuration:
    Number of  Copies              = 1
    Symbol Set                     = ROMAN-8
    Default Font Source            = Internal
    Default Font Number            = 1
    Current Feeder Tray            = Tray
    Form Length                    = 64 Lines
    Bitmap Type                    = Full Page
    Auto Line Feed                 = Off
    Auto Carriage Return           = Off
    Auto Page Eject Time           = Off
    'F' Fonts                      = Off

Available Emulations:
 *  Laserjet Series II Res  ID=1 PN=126-00230          Ver 3.33
    Diablo 630         Res  ID=2 PN=126-00240          Ver 2.64
    Epson FX-80        Res  ID=3 PN=126-00250          Ver 3.04
    IBM ProPrinter II  Res  ID=4 PN=126-00260          Ver 2.84
    HPGL 7475A         Res  ID=5 PN=126-00270          Ver 2.54
    Imagescript/2      Cart ID=6 PN=126-00730 7/31/90 Ver 2.0

    Note: * = Currently Selected
```

Figure 1. Status sheet

GP 3
Diagnostic Test Print

The diagnostic test print is produced under the control of the plug-in diagnostics cartridge. A segment of the bitmap is set up to draw a 5 pixel horizontal line across the page. The same line is repeated at approximately one inch intervals down the page.

NOTE: The test print is configured for LETTER size paper; when printed on A4 paper the image will be offset to the left of the paper and will finish before the bottom of the paper.

Procedure

1. Switch off the printer power.

CAUTION

Ensure that the connector on the diagnostics cartridge is correctly aligned with the corresponding connector in the printer; the connectors are polarised to prevent incorrect installation. Do not use excessive force when inserting the diagnostics cartridge.

2. Open the cartridge slot cover and insert the plug-in diagnostic cartridge (600T91812) into the cartridge slot (Figure 1).
3. Switch on the printer power; the message "DIAGNOSTICS MENU" will be displayed.
4. Using the DOWN ▼ button (to scroll down) and the UP ▲ button (to scroll up), scroll to the "PRINT TEST PAGE" message on the User Interface.
5. Press the ENTER ✳ button; the message "Print Requested" will be displayed and ESS test prints will be produced. As each test print is produced, the message "Page is Done" will be displayed momentarily, followed by the message "Print is Requested". This test will run until the RESET/CONTINUE <> button is pressed; when the test is stopped the printer returns to the diagnostics menu.
6. Switch off the printer power.
7. Unplug the diagnostics cartridge from the cartridge slot and close the cartridge slot cover.
8. Go to System Checkout in Section 1.

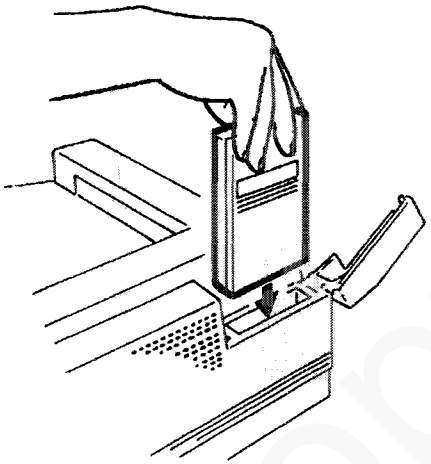


Figure 1. Diagnostics cartridge

GP 4
Internal Test Document

The Internal Test Document (Figure 1) shows line density, solid area density (SAD) and halftone density.

Procedure

1. Configure the printer for LJ II emulation; refer to GP 1 for instructions concerning system configuration.
2. Press the ON LINE ⊦ button to turn the printer off line; the ON LINE LED will go off.
3. Press the TEST ¢ button and hold it down for at least 5 seconds, then release it. The Internal Test Document will be produced.

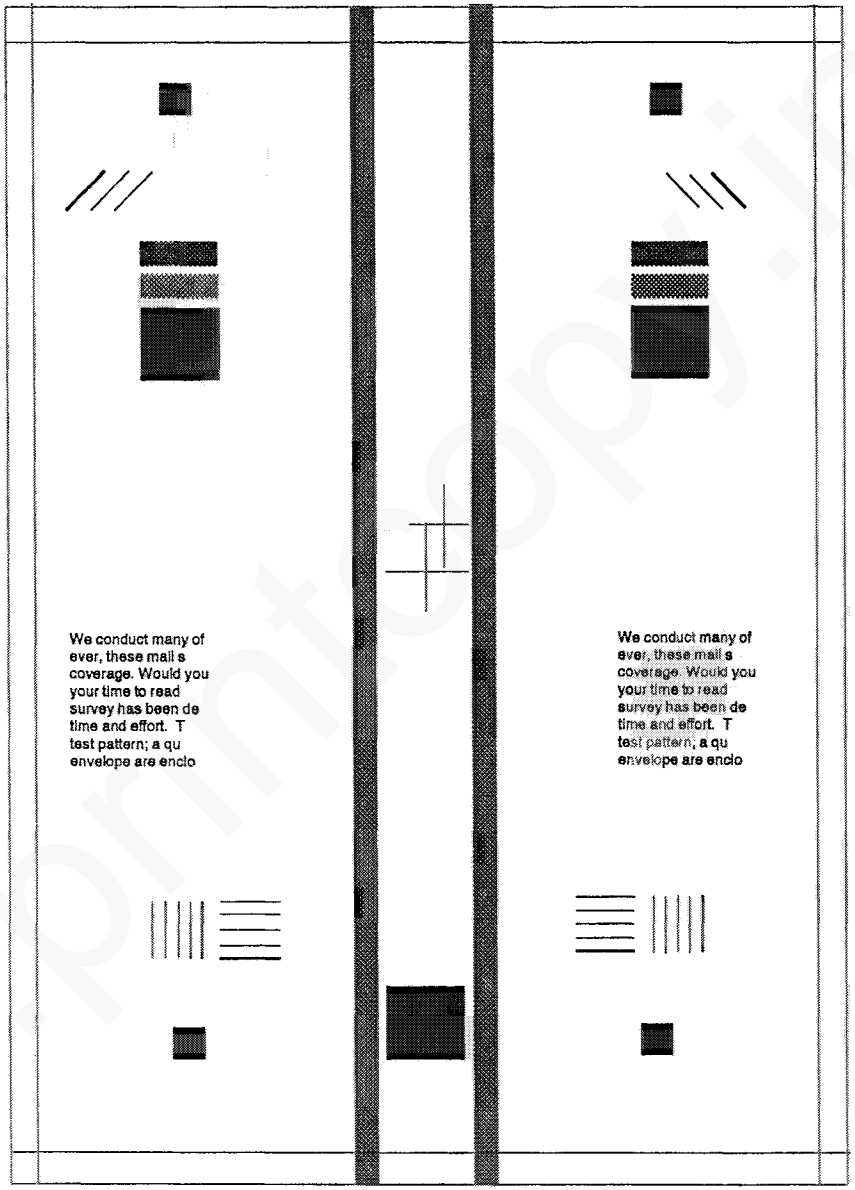


Figure 1. Internal test document

GP 5
Black, 2V and 2H Test Prints

The black test print is used to identify deletions, blemishes and other image quality defects. The 2V test print can be used to help identify image processing errors. The 2H test print can be used to help identify scan direction errors.

Procedure

1. Switch off the printer power.
2. Unplug the print counter and install the service print counter (Figure 1).
3. Switch on the printer power, while pressing the RESET/CONTINUE <> button; the User Interface will display the message "**********", followed by "TEST PRT 1:A4:BL".
4. Press the UP ▲ button to scroll through the paper size options (A4, LETTER, LEGAL, B5); select the required paper size.
5. Press the MENU ☰ button scroll through the test print options (BLK, 2V, 2H); select the required test print.
6. Press the RESET/CONTINUE <> button to start the test print; five test prints will be produced.
7. Switch off the printer power.
8. Unplug the service print counter and reinstall the print counter.
9. Switch on the printer power.
10. Go to System Checkout in Section 1.

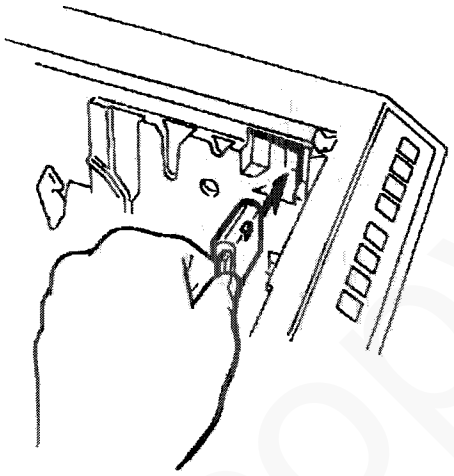


Figure 1. Print counter

GP 7
Diagnostic Cartridge

The plug-in diagnostic cartridge (600T91812), which is inserted into the cartridge slot, contains several diagnostic tests. Currently only the test page, serial loopback and parallel loopback procedures are designed for use by the service representatives. Refer to GP 3 for the Diagnostic Test Print procedure, GP 8 for the Parallel Loopback procedure, and GP 9 for the Serial Loopback procedure.

CAUTION

When installing the diagnostic cartridge, ensure that the connector on the diagnostics cartridge is correctly aligned with the corresponding connector in the printer; the connectors are polarised to prevent incorrect installation. Do not use excessive force when inserting the diagnostics cartridge.

GP 8
Parallel Loopback Test

The loopback test for the parallel host interface resides on the plug-in diagnostic cartridge. Follow the procedure below to perform the loopback test.

NOTE: the parallel loopback adaptor (600T80136) has a red and a green LED fitted; these indicators are NOT functional during this test procedure.

Initial Actions

Print a status sheet (GP 2) to verify that the printer is configured for a parallel host interface; reconfigure the printer if necessary (GP 1).

Procedure

1. Switch off the printer power.

CAUTION

Ensure that the connector on the diagnostics cartridge is correctly aligned with the corresponding connector in the printer; the connectors are polarised to prevent incorrect installation. Do not use excessive force when inserting the diagnostics cartridge.

2. Open the cartridge slot cover and insert the plug-in diagnostic cartridge (600T91812) into the cartridge slot (Figure 1).
3. Disconnect the host interface cables from the printer interface connectors (Figure 2).
4. Switch on the printer power.
5. Using the DOWN ▼ button (to scroll down) and the UP ▲ button (to scroll up), scroll to the "PARL PORT TEST" message on the User Interface.
6. Press the ENTER ✳ button; the message "Install Adapter" will be displayed. Connect the parallel loopback adaptor (600T80136) into the parallel connector (Figure 2).
7. Press the ENTER ✳ button; the parallel loopback test will begin. The user interface will display a sequence of numbers starting with "PARALLEL: 70/00", then "PARALLEL: 71/00"; the test sequence continues until "PARALLEL: 70/99" and "PARALLEL: 71/99" are reached, when the test will loop and start again.
8. Stop the parallel loopback test by pressing the MENU ☰ button for 5 seconds; the printer will return to the diagnostics menu.
9. Switch off the printer.
10. Disconnect the parallel loopback adaptor from the printer interface connectors.
11. Test the host interface cable (if possible) by connecting the interface cable to the printer and connecting the parallel loopback adaptor to the host end of the cable. Switch on the printer power and repeat steps 5 to 9 above.
12. Switch off the printer power, unplug the diagnostics cartridge from the cartridge slot and close the cartridge slot cover.
13. Disconnect the parallel loopback adaptor and then reconnect the host interface cables to the printer interface connectors.
14. Switch on the printer power.
15. If the printer configuration was changed for this procedure, reconfigure the printer to the original settings (GP 1). Print a status sheet (GP 2) to verify that the configuration settings are correct.
16. Go to System Checkout in Section 1.

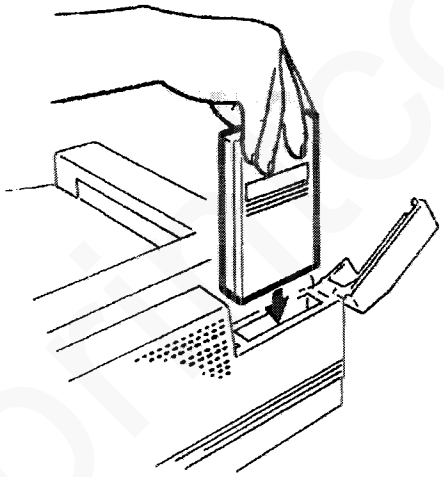


Figure 1. Diagnostics Cartridge

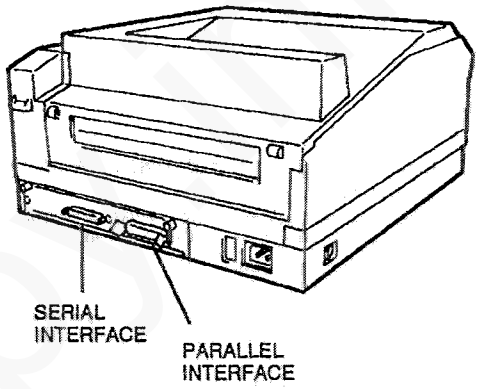


Figure 2. Interface Connectors

GP 9
Serial Loopback Test

The loopback test for the serial host interface resides on the plug-in diagnostic cartridge. Follow the procedure below to perform the loopback test.

NOTE: the serial loopback adaptor (600T80135) has two connectors fitted; one for RS232 and one for RS422. Ensure that the RS232 connector is used for this test.

Initial Actions

Print a status sheet (GP 2) to verify that the printer is configured for a serial host interface; reconfigure the printer, if necessary (GP 1).

Procedure

1. Switch off the printer power.

CAUTION

Ensure that the connector on the diagnostics cartridge is correctly aligned with the corresponding connector in the printer; the connectors are polarised to prevent incorrect installation. Do not use excessive force when inserting the diagnostics cartridge.

2. Open the cartridge slot cover and insert the plug-in diagnostic cartridge (600T91812) into the cartridge slot (Figure 1).
3. Disconnect the host interface cables from the printer interface connectors (Figure 3).
4. Switch on the printer power.
5. Using the DOWN ▼ button (to scroll down) and the UP ▲ button (to scroll up), scroll to the "SERL PORT TEST" message on the User Interface.
6. Press the ENTER ✳ button; the message "Install Adapter" will be displayed. Plug the RS232 connector on the serial loopback adaptor (600T80135) into the printer serial connector (Figure 2).

NOTE: the serial loopback adaptor (600T80135) has two connectors fitted; one for RS232 and one for RS422. Ensure that the RS232 connector is used for this test.

7. Press the ENTER ✳ button; the serial loopback test will begin. The user interface will display a sequence of numbers starting with "SERIAL: 75/00" and "SERIAL 77/00"; the test sequence continues until "SERIAL: 75/99" and "SERIAL: 77/99" are reached, when the test will loop and start again.
8. Stop the serial loopback test by pressing the MENU ☰ button for 5 seconds; the message "Remove Adapter" will be displayed.
9. Remove the serial loopback adaptor and then press the MENU ☰ button; the printer will return to the diagnostics menu.
10. Switch off the printer power.
11. Disconnect the serial loopback adaptor from the printer interface connectors.
12. Test the host interface cable (if possible) by connecting the interface cable to the printer and connecting the serial loopback adaptor to the host end of the cable. Switch on the printer power and repeat steps 5 to 9 above.
13. Switch off the printer power, unplug the diagnostics cartridge from the cartridge slot and close the cartridge slot cover.
14. Disconnect the serial loopback adaptor and then reconnect the host interface cables to the printer interface connectors.
15. Switch on the printer power.
16. If the printer configuration was changed for this procedure, reconfigure the printer to the original settings (GP 1). Print a status sheet (GP 2) to verify that the configuration settings are correct.
17. Go to System Checkout in Section 1.

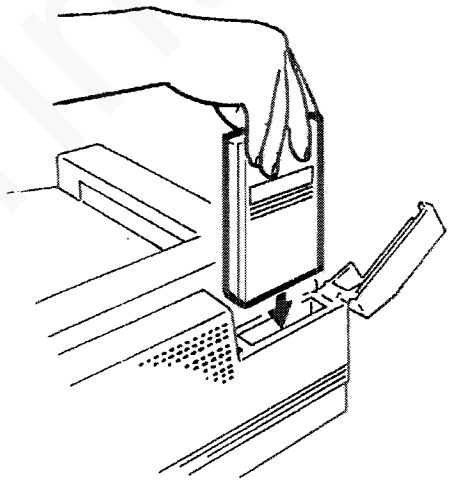


Figure 1. Diagnostics Cartridge

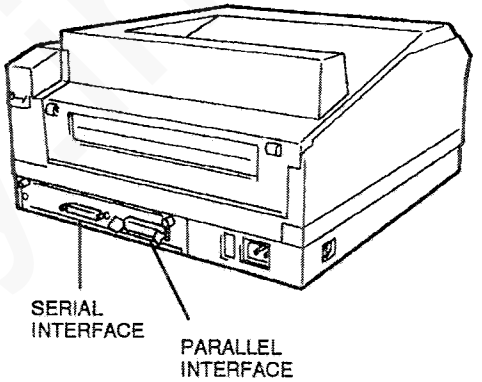


Figure 2. Interface Connectors

GP 10
Reset Message Status

This procedure must be performed after completing the 80,000 print service call (J6 RAP in Section 2), to reset the "SERVICE REQUIRED" message displayed on the User Interface.

Procedure

1. Switch off the printer power.
2. Unplug the print counter and install the service print counter (Figure 1).
3. Switch on the printer power, while pressing the TEST button; the User Interface will display the messages "**********" and "CLEAR MAINTE.?".
4. Press the MENU button; the User Interface will display the messages "CLEAR MAINTE.?" and "COMPLETED". The User Interface message status is reset to normal.
5. Switch off the printer power.
6. Unplug the service print counter and reinstall the print counter.
7. Switch on the printer power.

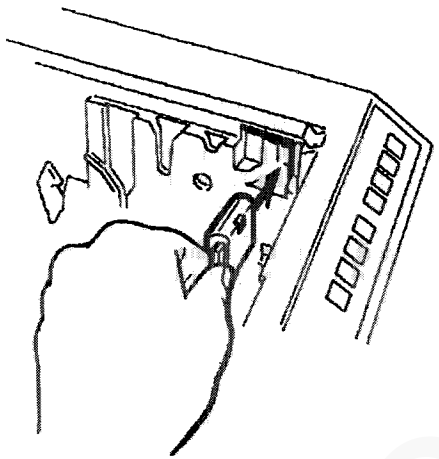


Figure 1. Print Counter

ESD (Electrostatic Discharge) Protection Procedures

Purpose

This procedure describes the actions that are necessary to prevent ESD damage to electronic components when servicing the printer.

Procedure

Electrostatic Discharge (ESD) damage can occur when low current electronic components, such as PWBs and EPROMs, are handled in a high static environment such as an office with synthetic carpets.

In 90% of cases, ESD damage does not produce immediate failures; this causes increased callbacks, increased servicing costs and decreased customer satisfaction.

To eliminate ESD related failures, the service engineer must be connected to ground when handling PWBs; any work on PWBs (prior to installation in the printer) must be performed on a grounded surface.

An ESD Field Service Kit is available, consisting of:

- ESD workplace mat (600mm x 600mm)
- Coiled cord (3 Megohm)
- Ground cord (2.5 metre)
- ESD wrist strap
- ESD ground pins / crocodile clip
- Pouch
- Instructions

The recommended ground attachment point is shown in Figure 1.

The following symbol and caution will appear on pages of this manual as a reminder when and where ESD protection procedures are necessary.

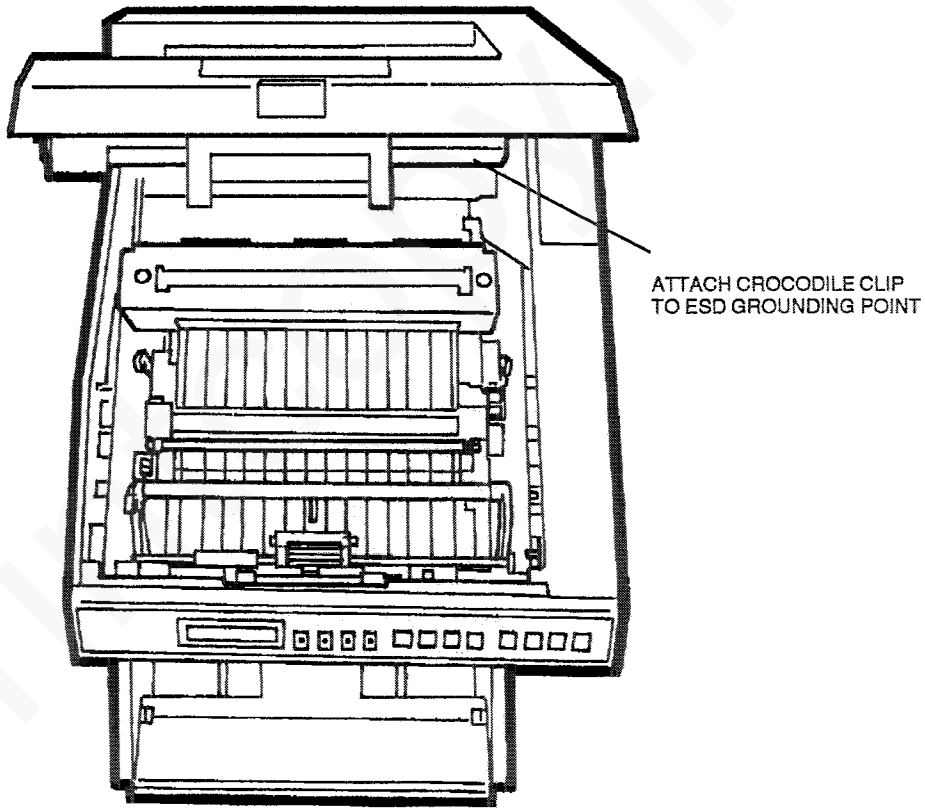


Figure 1. ESD Grounding Points

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage

Product Specifications

Physical Characteristics

Depth - 405mm (15.9 in.)
Width - 365mm (14.3 in.)
Height - 198mm (7.7 in.)
Weight - 13 kg (28.7 lb.)

Capabilities

Print Rate

4 pages per minute

Warm Up Time

Within 90 seconds

First Image Out Time

34 seconds for A4 / 8.5 x 11" paper

Resolution

300 X 300 SPI

Emulations

Standard - H.P. Laserjet II
Optional - Diablo 630, Epson FX80, IBM Proprinter, HPGL 7475 A, XES

Interfaces

Standard - Centronics Parallel
Optional - RS-232-C Serial

Memory

0.5 MByte, expandable up to 4.5 MByte
(2.0 MByte expansion kits)

Standard Fonts

Courier 12 point 10 pitch
Courier Bold 12 point 10 pitch
Line Printer Medium 8.5 point 16.66 pitch
Swiss Bold 14.4 point proportional
Dutch Medium 10 point proportional
Dutch Bold 10 point proportional
Dutch Medium Italic 10 point proportional
Dutch Medium 8 point proportional

Paper Specifications

Paper Sources/Capacity

Tray 1 - 100 sheets, 80 gsm
Tray 2 (optional) - 300 sheets, 80 gsm

Paper Weights

Paper Trays - 60 gsm to 100 gsm
Manual Bypass - 60 gsm to 120 gsm

Paper Size Range

Tray 1 - A4, A5, 8.5 x 11 in., 8.5 x 14 in.
Tray 2 (optional) - A4, 8.5 x 11 in.

Other System Materials

Transparencies, labels, drilled or perforated stock, envelopes (C5, DL, Com-10, Monarch) and preprinted stock may also be used in the printer.

Operating Environment

Temperature

10°C to 32°C (50°F to 90°F)

Humidity

15% to 85% RH

Altitude

Sea level to 2000 metres (6,561.6 feet)

Heat Output (Average)

700 W

Noise Output (Average)

Impulse 60 dBa
Printing - 46 dBA
Standby - 35 dBA

Electrical Power Requirements

Power Requirements

a. USO and XCI configuration:
Nominal - 115VAC, single phase
Frequency 50/60Hz (49.9Hz to 60.1Hz)
NOTE: The printer may operate with degraded performance between 98VAC and 127VAC.

b. RX configuration:
Nominal - 220/240VAC, single phase
Frequency 50/60Hz (49.9Hz to 60.1Hz)
NOTE: The printer may operate with degraded performance between 198VAC and 264VAC.

Power Consumption

Maximum 700 W

Tools and Supplies

Tools

Basic Multinational Tool Kit 600T1835

Consumables

Location	Description	Part Number
All	Toner cartridge	6R90187
All	Print cartridge and print counter	13R00064

Test Patterns

Location	Description	Part Number
All	SAD test pattern	82P520

Other Tools and Supplies

Location	Description	Part Number
All	Black bag	95P501
All	Diagnostic cartridge	600T91812
All	EPROM remover	600T80020
All	Interlock cheater	600T91089
All	Parallel loopback test adaptor	600T80136
All	Serial loopback test adaptor	600T80135
All	ESD kit	600T42001
All	Leads kit	600T1617
All	Fuser temperature tape	600T90855
All	Service print counter	600T91808
All	10 way power supply connector tool	600T91810
All	7 way IOT controller connector tool	600T91815
All	Protective shroud for low voltage power supply PWBA	600T91821

Cleaning Materials

Location	Description	Part Number
All	Drop cloth	35P1737
All	Lint free cloth	600S4372
All	Cotton swabs (cotton bud)	35P2162
All	Cleaning sachet	43P67
All	Conductive grease	70E110
All	Oil (Tellus 68)	600T90393
All	Silicone grease	600T90429
All	Mylar scraper	600T91811
USO/ XCL	Disposable plastic gloves (large)	99P3024
USO/ XCL	Film remover	43P45
RX	Disposable plastic gloves (large)	8R90021
RX	General cleaning solvent	8R90176
RX	Cleaning cloth	8R90019

Change Tag/MODs

Introduction

All important modifications are identified by a Tag/MOD number on a matrix card attached to each 4010 printer.

This section describes all of the tags as well as multinational applicability, classification codes, and permanent or temporary modification information.

Classification Codes

A Tag/MOD number may be required to identify differences between parts that cannot be interchanged, or differences in diagnostic, repair, installation or adjustment procedures. A Tag/MOD number may also be required to identify the presence of optional hardware, special non-volatile memory programming, or if mandatory modifications have been installed. Each Tag/MOD number is given a classification code to identify the type of change the Tag/MOD has made.

M- Mandatory
N- Not installed in the field
O- Optional
R- Repair
S- Situational

Change Tag/MOD Index

Tag/MOD: 1
Class: M
Use: Communications
Mfg. Serial No.: 1002501 (USO), (XCI).
2017861 (RX).
Name: ASIC and ROM
Purpose: To suppress internal and external noise.
Kit Number: N/A
Reference: None

Tag/MOD: 50
Class: S
Use: Machine operation.
Mfg. Serial No.: TBA
Name: 4.17 Software
Purpose: To correct software bugs including significant problems with Wordperfect 5.1.
Kit Number: 537K19120
Reference: None

Tag/MOD: 125
Class: S
Use: Image Quality.
Mfg. Serial No.: 1005561 (USO), (XCI).
2017901 (RX).
Name: Altitude Adjustment procedure
Purpose: To improve print quality on certain machines installed 1000 metres (3300 ft.) above sea level.
Kit Number: N/A
Reference: None

7. Component & CN Locator

Introduction

This section contains component and plug/jack location drawings. These drawings are not specific to individual procedures but are provided for general reference.

NOTE: The connectors on this product do not conform to the plug/jack (P/J) convention; all connectors in this product are identified as CNXXX (i.e. CN201). Some CN numbers are duplicated, with (for example) a CN1 on the user interface PWBA, the IOT controller PWBA, the high voltage power supply PWBA and the ESS controller PWBA; use the CN Index to identify particular connectors.

Title **Page**

Section Contents

CN Index

Locate the source connector (CN) in the left column of the index; note that the column is in numeric/alphanumeric order. Refer to the right hand Figure/Item Number column; the first digit identifies the figure number and the second digit identifies the item number. Item numbers are shown in a circle on the figure in a clockwise presentation, incrementing from 1. The PWBA Location column identifies the PWBA on which the CN is fitted. The Destination/Source column identifies the PWBA or component each CN connects to.

CN No.	PWBA Location	Destination/Source	Figure/Item
CN1	User interface	IOT controller PWBA	1 / 1
CN1	IOT control	High voltage power supply PWBA	3 / 3
CN1	High voltage power supply	Low voltage power supply PWBA	4 / 4
CN1	ESS control	High voltage power supply PWBA	2 / 5
CN1	Serial interface (option)	Serial interface for host (option)	Section 8
CN2	IOT control	High voltage power supply PWBA	3 / 2
CN2	High voltage power supply	ESS controller PWBA	4 / 5
CN2	Serial interface (option)	ESS controller PWBA	Section 8
CN2	ESS control	High voltage power supply PWBA	2 / 1
CN3	ESS control	Font cartridge or Postscript cartridge	2 / 4
CN3	IOT control	Tray 2 PWBA	3 / 1
CN3	Tray 2 (option)	IOT controller PWBA	Section 8
CN3	High voltage power supply	ESS controller PWBA	4 / 6
CN4	High voltage power supply	IOT controller PWBA	4 / 1
CN4	ESS control	Serial interface PWBA (option)	2 / 3
CN5	IOT control	Cassette feed solenoid	3 / 13
CN5	High voltage power supply	IOT controller PWBA	4 / 2
CN5	ESS control	Parallel interface connector for host	2 / 2
CN6	IOT control	Developer unit terminals	3 / 12
CN7	High voltage power supply	Timing sensor	4 / 3
CN7	IOT control	User interface PWBA	3 / 11
CN8	IOT control	Tray 1 paper empty switch	3 / 10
CN9	IOT control	Print counter & service print counter	3 / 9
CN10	IOT control	Main drive motor	3 / 8
CN11	IOT control	Laser scanner assembly & print cartridge	3 / 7
CN12	IOT control	Fuser cover	3 / 6
CN13	IOT control	Paper output switch	3 / 5
CN14	IOT control	Fan assembly	3 / 4
CN101	Low voltage power supply	Fuser assembly	5 / 2
CN201	Low voltage power supply	High voltage power supply PWBA	5 / 1

PWB Locations

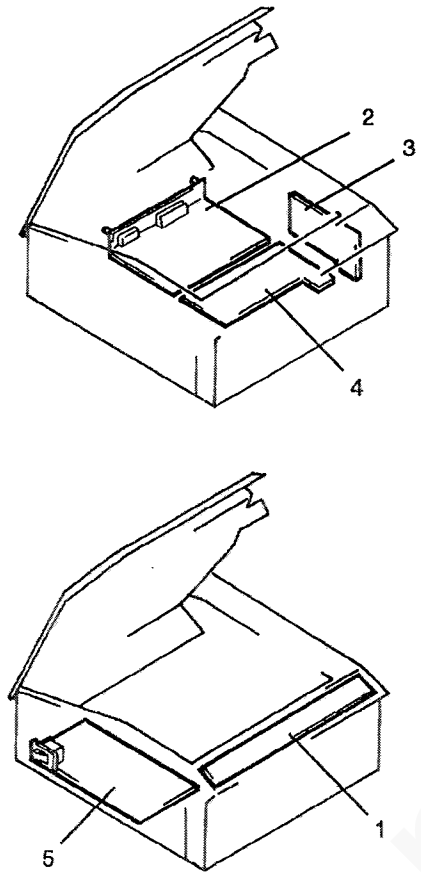


Figure 1. PWB locations

Key

1. User interface PWBA
2. ESS controller PWBA
3. IOT controller PWBA
4. High voltage power supply PWBA
5. Low voltage power supply PWBA

CN Locations

Figure 1. User interface CN location

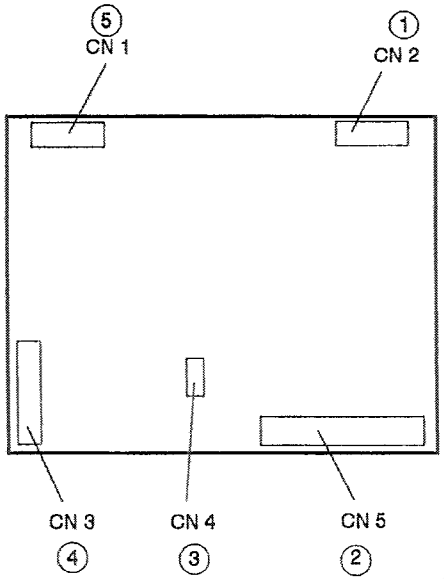


Figure 2. ESS controller CN locator

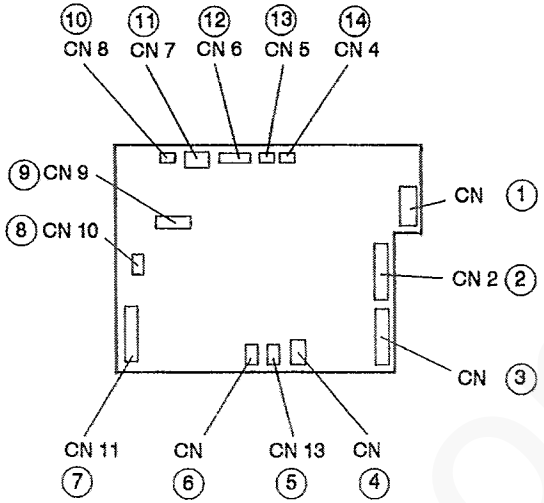


Figure 3. IOT controller CN location

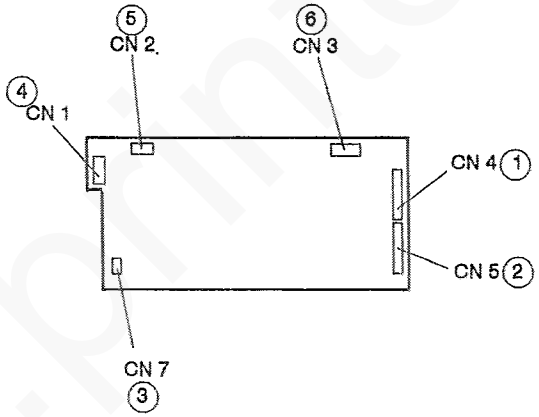


Figure 4. High voltage power supply CN location

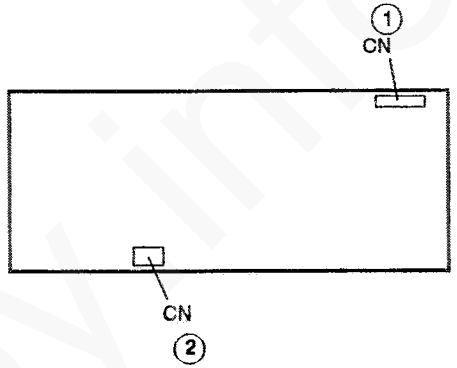


Figure 5. Low voltage power supply CN location

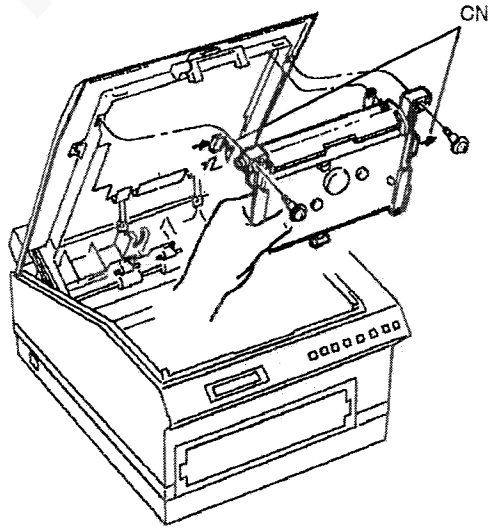


Figure 6. Laser scanner assembly CN location

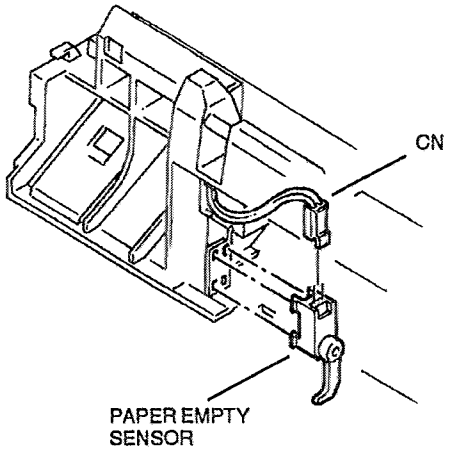
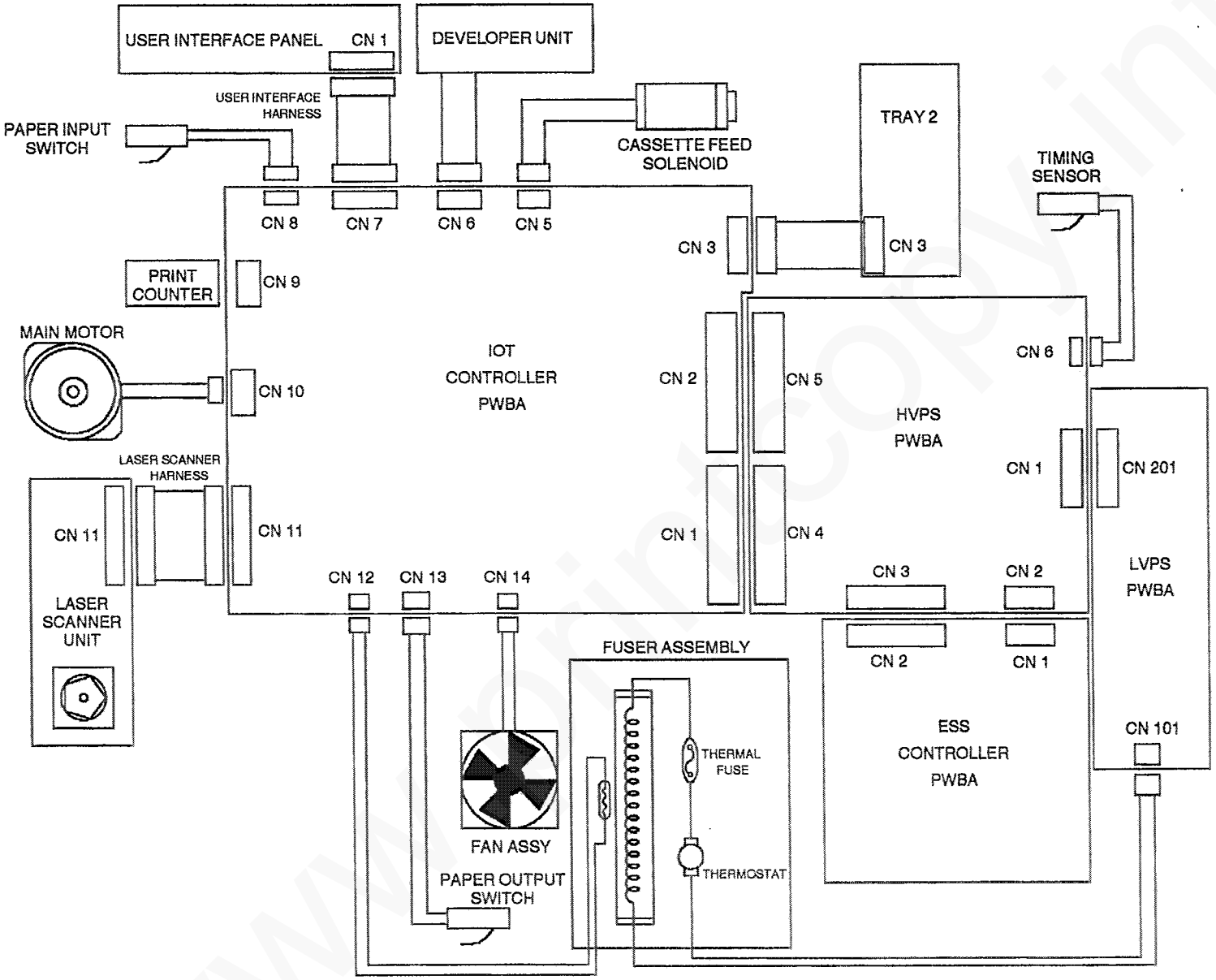


Figure 7. Paper sensor CN location

Interconnection Diagram



8. Options & Accessories

Introduction

This section provides installation and service procedures for optional features that the customer may purchase.

Status Indicator repair analysis procedures are described in Section 2 of this manual.

When any options or accessories that impact the servicing of this product are made available, this section will be updated.

REP 3.4 Serial communication PWBA

Parts List on PL 21

Removal

CAUTION
Observe the ESD precautions.

1. Remove the ESS controller PWBA (REP 3.3).
2. (Figure 1) Remove the serial communications PWBA.

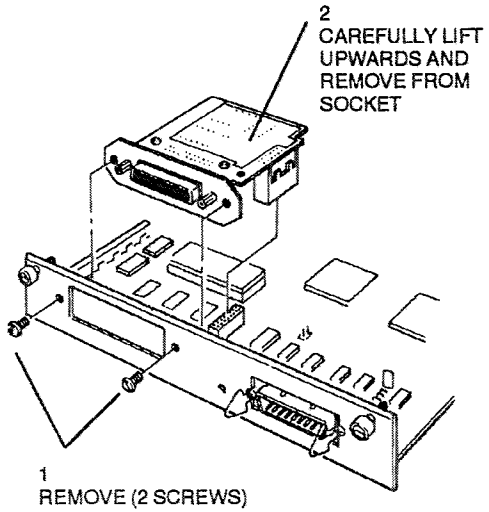


Figure 1. Serial communication PWBA removal

Replacement

1. Reinstall or install a new serial communication PWBA as necessary. The replacement procedure is the reverse of the removal procedure.
2. Amend the printer configurations as necessary (GP 1.1, GP 1.2 or GP 1.3).
3. Go to System Checkout in Section 1.

REP 3.5 1MByte SIMM PWBA

Parts List on PL 21

Removal

CAUTION
Observe the ESD precautions.

1. Remove the ESS controller PWBA (REP 3.3).
2. (Figure 1) Remove the 1MByte SIMM PWBA.

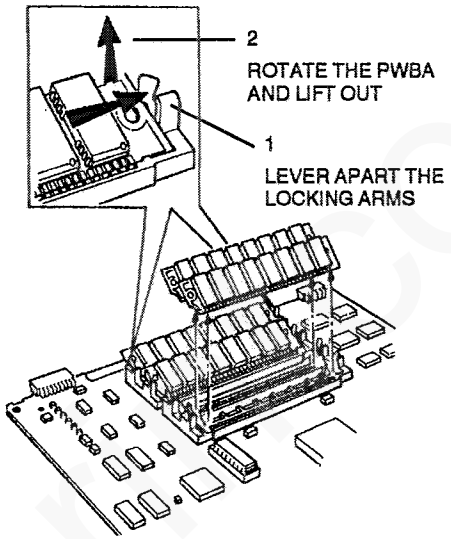


Figure 1. 1MByte SIMM PWBA removal

Replacement

CAUTION
Before attempting to fit a SIMM PWBA, ensure the contacts of the ESS locations U3, U4, U10 or U11 are correctly aligned and soldered. If not, and difficulty is experienced in fitting a new SIMM, replace the ESS PWBA as forcing the SIMM into the ESS base location could damage both SIMM and ESS.

1. Reinstall or install a new 1MByte SIMM PWBA as necessary. The replacement procedure is the reverse of the removal procedure.
2. Amend the printer configurations as necessary (GP 1.1, GP 1.2 or GP 1.3).
3. Go to System Checkout in Section 1.

REP 3.7 Emulations ROM 2

Parts List on PL 21

Removal

CAUTION
Observe the ESD precautions.

1. Remove the ESS controller PWBA (REP 3.3).
2. (Figure 1) Remove the emulations ROM 2.

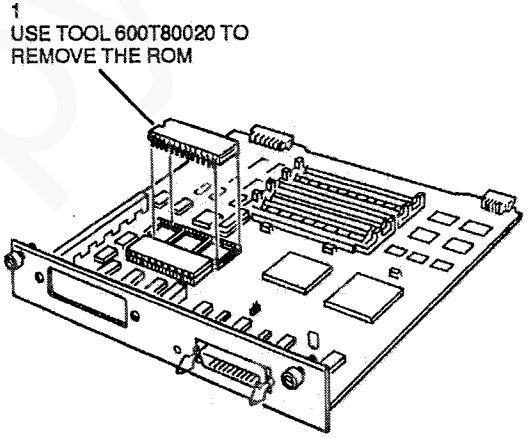


Figure 1. Emulations ROM 2 removal

Replacement

1. Reinstall or install a new emulations ROM 2 as necessary. The replacement procedure is the reverse of the removal procedure.
2. Amend the printer configurations as necessary (GP 1.1, GP 1.2 or GP 1.3)
3. Go to System Checkout in Section 1.

REP 3.8 Tray 2 PWBA

Parts List on PL 19

Removal

1. Remove the tray 2 cassette feed roller assembly (REP 7.8).
2. Disconnect the following harnesses from the tray 2 PWBA:
   - drive motor harness from CN 3
   - paper feed sensor harness from CN 2
   - cassette feed solenoid harness from CN4.
3. (Figure 1) Remove the tray 2 motor, PWBA and drive gear assembly.

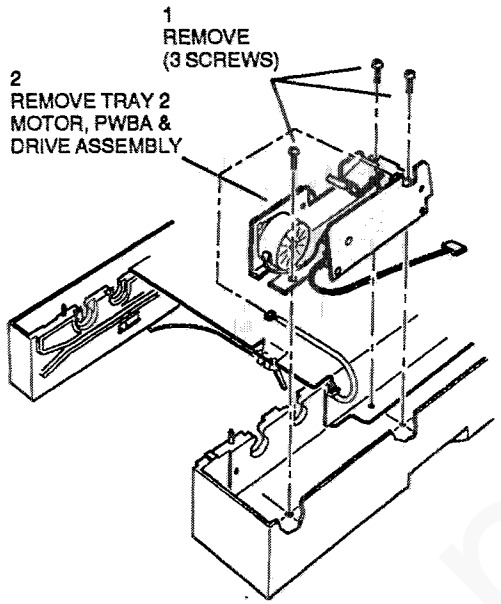


Figure 1. Tray 2 motor, PWBA & drive assembly removal

4. (Figure 2) Remove the tray 2 PWBA.

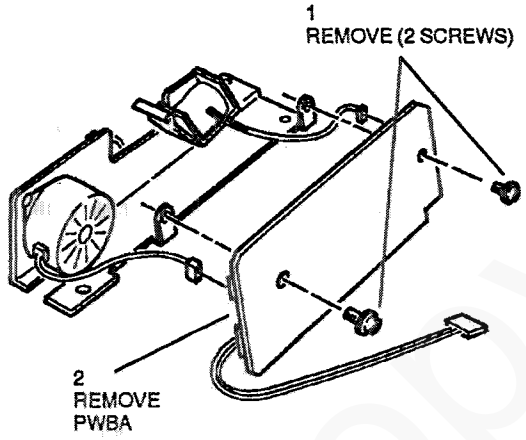


Figure 2. Tray 2 PWBA removal

Replacement

1. Reinstall or install a new tray 2 PWBA as necessary. The replacement procedure is the reverse of the removal procedure.
2. Perform the Verical & Horizontal Alignment procedure (ADJ 6.1).
3. Go to System Checkout in Section 1.

REP 3.9 Font cartridge

Parts List on PL 20

Removal

1. Switch off the printer power and disconnect the power cord.
2. (Figure 1) Open the font cartridge cover and remove the font cartridge.

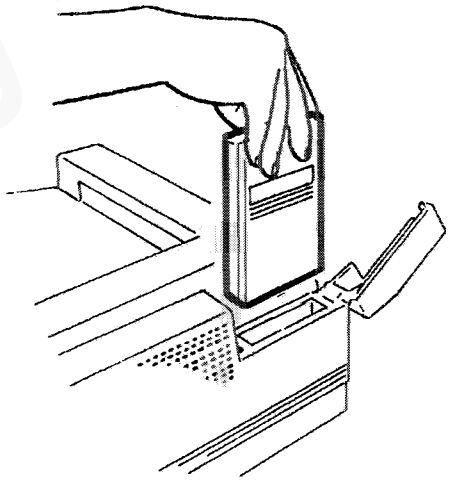


Figure 1. Cartridge removal

Replacement

CAUTION
Incorrect fitment will damage both cartridge and machine.

1. Reinstall or install a new font cartridge as necessary. The replacement procedure is the reverse of the removal procedure.
2. Amend the printer configurations as necessary (GP 1.1, GP 1.2 or GP 1.3).
3. Go to System Checkout in Section 1.

REP 3.10 Page description language

Parts List on PL 20

NOTE: At least 2.5 MBytes of memory is required for the page description language cartridge to function.

Removal

1. Switch off the printer power and disconnect the power cord.
2. (Figure 1) Open the font cartridge cover and remove the page description language cartridge.

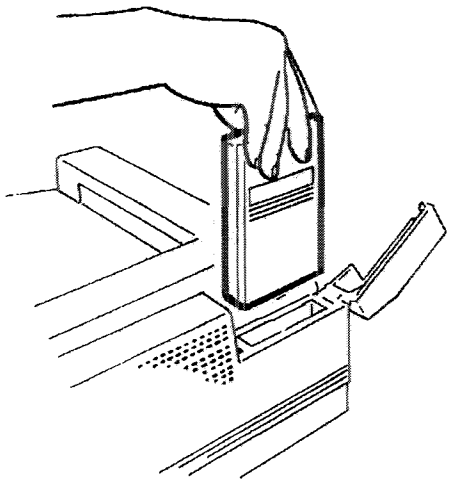


Figure 1. Cartridge removal

Replacement

CAUTION

Incorrect fitment will damage both cartridge and machine.

1. Reinstall or install a new page description language cartridge. The replacement procedure is the reverse of the removal procedure.
2. Amend the printer configurations as necessary (GP 1.1, GP 1.2 or GP 1.3).
3. Go to System Checkout procedure in Section 1.

REP 3.11 PCL 5 (interim)

CAUTION

Observe the ESD precautions.

Removal

1. Switch off the printer power and disconnect the power cord.
2. Remove the ESS controller PWBA (REP 3.3).
3. If installed, remove the serial communications PWBA (REP 3.4).

CAUTION

The long stand-off connecting pins of the PCL daughter board are extremely brittle and must not be bent.

NOTE: When removing the daughter board, gently ease upward ensuring it does not tilt or twist, and lift off from ESS.

4. (Figure 1) Remove the daughter board and ROM from the ESS PWBA.

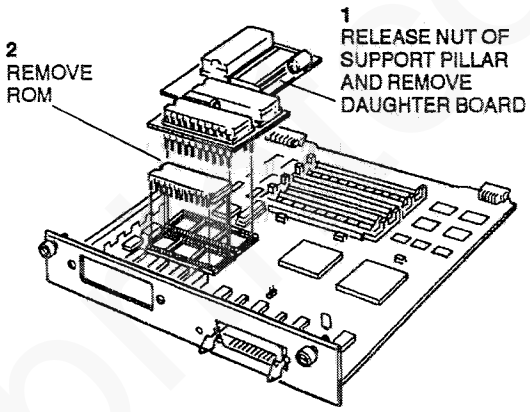


Figure 1. PCL5 (Interim) Removal

Replacement

1. Reinstall or replace the daughter board and ROM as necessary into the ESS PWBA.

CAUTION

Ensure the long stand-off pins of the daughter board are vertically and squarely located in the ESS base.

2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout procedure in Section 1.

REP 3.12 PCL 5

Parts List on PL 21

CAUTION

Observe the ESD precautions.

Removal

1. Switch off the printer power and disconnect the power cord.
2. Remove the ESS controller PWBA (REP 3.3).
3. If installed, remove the serial communications PWBA (REP 3.4).
4. (Figure 1) Remove PCL5 2M ROM 1, 512K ROM 2 and PAL IC from the ESS PWBA.

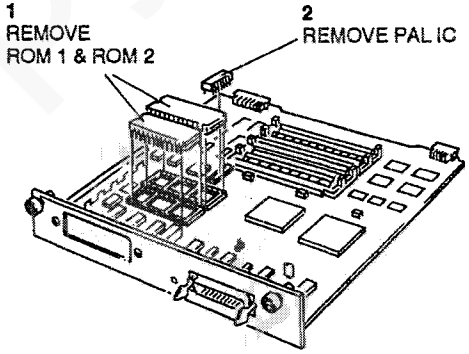


Figure 1. PCL5 Removal

Replacement

1. Reinstall or replace the PCL5 ROM 1 (U28), ROM 2 (U24) or PAL IC (U23) as necessary.

CAUTION

Ensure all the legs of the integrated circuits are straight and that the alignment mark on the chips aligns with the alignment marks printed on the PWBA.

NOTE: Any spare connectors on the IC socket (U28) must be at the alignment mark end of the base.

2. The reinstallation/replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout procedure in Section 1.

REP 4.6 Tray 2 drive motor

Parts List on PL 19

1. Remove the tray 2 feed shaft (REP 8.9).
2. Disconnect the following harnesses from the tray 2 PWBA:
   - drive motor harness from CN 3
   - paper feed sensor harness from CN 2
   - cassette feed solenoid harness from CN4.
3. (Figure 1) Remove the tray 2 motor, PWBA and drive gear assembly.

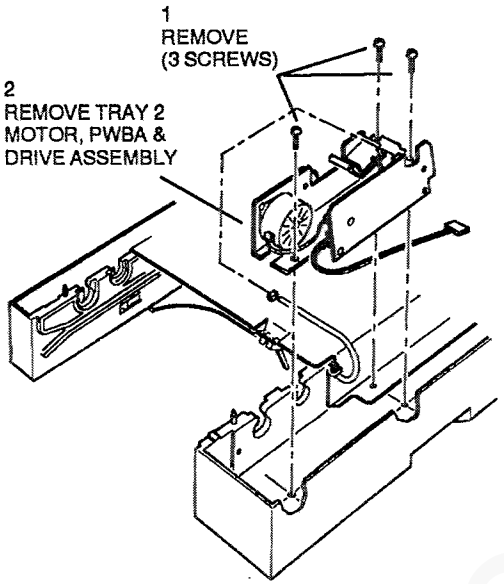


Figure 1. Tray 2 motor, PWBA & drive assembly removal

4. (Figure 2) Remove the tray 2 motor.

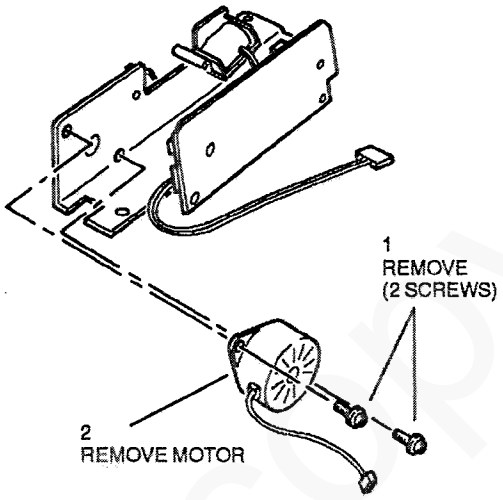


Figure 2. Tray 2 motor removal

Replacement

NOTE: Ensure that the drive motor is positioned so that the harness exits the motor towards the front of tray 2.

1. Reinstall or install a new tray 2 motor as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 7.5 Tray 2

Parts List on PL 17, PL 18

Removal

1. Switch off the printer power and disconnect the power cord.
2. Remove the developer unit and print cartridge from the printer; place the print cartridge in a lightproof bag.
3. Remove the tray 1 paper input tray.
4. Remove the face-up paper output tray, if fitted.
5. Slide the paper tray out of tray 2.
6. Carefully position the printer on its left-hand side, using a drop cloth to protect the covers and worktop.
7. (Figure 1) Remove the four tray 2 securing screws.

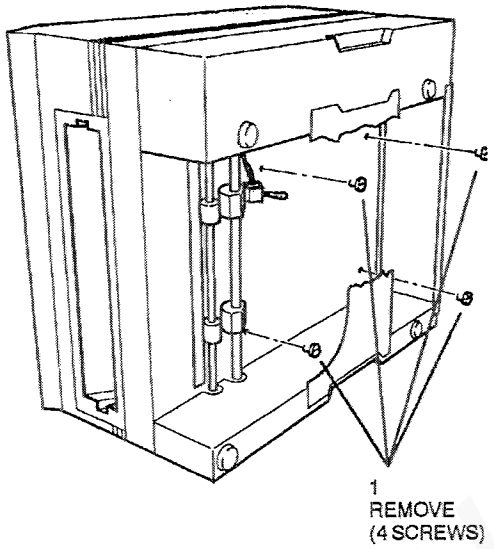


Figure 1. Tray 2 securing screws removal

8. (Figure 2) Remove tray 2 from the printer.

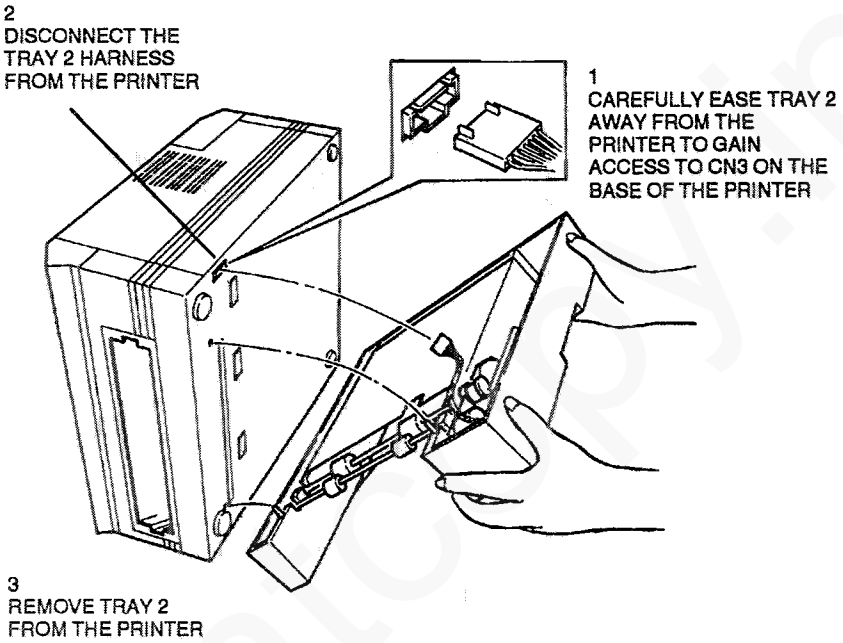


Figure 2. Tray 2 removal

Replacement

1. Reinstall or install a new tray 2 as necessary. The replacement procedure is the reverse of the removal procedure.
2. Amend the printer configurations as necessary (GP 1.1, GP 1.2 or GP 1.3).
3. Go to System Checkout in Section 1.

REP 7.6 Tray 2 paper tray

Parts List on PL 17

Removal

1. Slide the paper tray out of tray 2.

Replacement

1. Reinstall or install a new paper tray as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 7.7 Tray 2 cassette spring

Parts List on PL 17

Removal

1. Slide the paper tray out of tray 2 and then remove the paper from the paper tray.
2. Unscrew the two screws that secure the snubber brackets into tray 2, then remove the snubber brackets (Figure 1).
3. Hinge the sprung plate upwards and remove the two cassette springs (Figure 1).

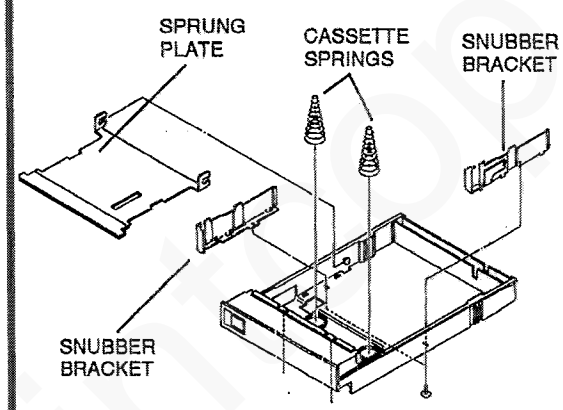


Figure 1. Tray 2 paper tray

Replacement

NOTE: The cassette springs should be replaced in pairs; replacing one cassette spring may result in unreliable paper feeding from tray 2.

1. Reinstall or install new cassette springs as necessary. The replacement procedure is the reverse of the removal procedure.

CAUTION

When reinstalling the snubber brackets, ensure that the locating lugs on the bottom of each snubber bracket are correctly inserted into the corresponding slots in the base of the paper tray.

NOTE: The location of the snubber brackets is determined by the paper size:

- *A4 paper: both snubber brackets should be located in the slots furthest from the paper tray sides.*
- *8.5" X 11" paper: both snubber brackets should be located in the slots closest to the paper tray sides.*

2. Go to System Checkout in Section 1.

REP 7.8 Tray 2 cassette feed roller assembly

Parts List on PL 18

1. Remove the tray 2 paper feed shaft (REP 8.9).
2. (Figure 1) Remove the cassette feed roller from tray 2.

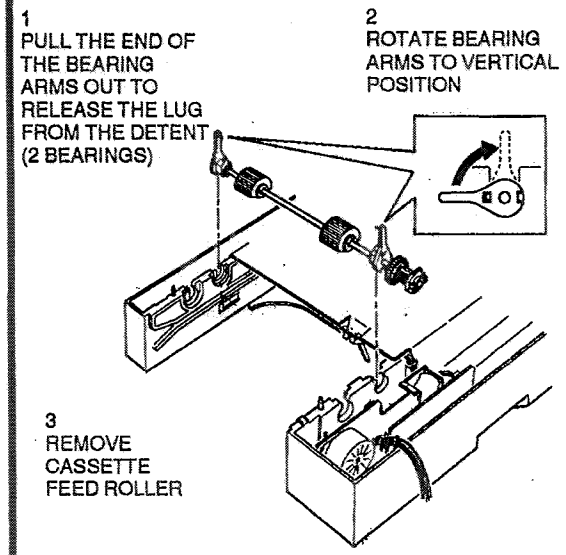


Figure 1. Tray 2 cassette feed roller removal

Replacement

CAUTION

When reinstalling the cassette feed roller, ensure that the ribbed part of the rubber pads faces upwards.

1. Reinstall or install a new cassette feed roller as necessary. The replacement procedure is the reverse of the removal procedure.
2. Lubricate the left-hand end of the cassette feed roller with a small amount of conductive grease (70E110), to ensure good continuity with the ground contact.
3. Go to System Checkout in Section 1.

REP 7.9 Tray 2 cassette feed solenoid assembly

Parts List on PL 18, PL 19

Removal

1. Remove the tray 2 PWBA (REP 3.8).
2. (Figure 1) Remove the tray 2 cassette feed solenoid.

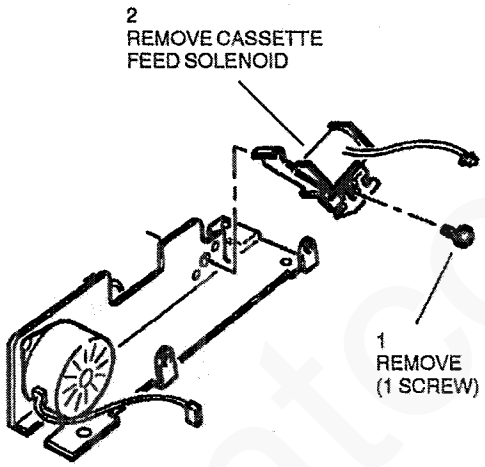


Figure 1. Tray 2 cassette feed solenoid removal

Replacement

CAUTION

When reinstalling the cassette feed solenoid ensure that the locating slots in the solenoid are fitted over the corresponding lugs on the frame. If the solenoid has two slots allowing a range of adjustment, locate the solenoid in the middle of its range of adjustment

1. Reinstall or install a new cassette feed solenoid as necessary. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

REP 8.8 Tray 2 feed sensor

Parts List on PL 18

Removal

1. Remove tray 2 from the printer (REP 7.5).
2. Disconnect the tray 2 feed sensor harness from CN 2 on the tray 2 PWB.
3. Bend open the sensor harness retaining clip.
4. (Figure 1) Remove the feed sensor.

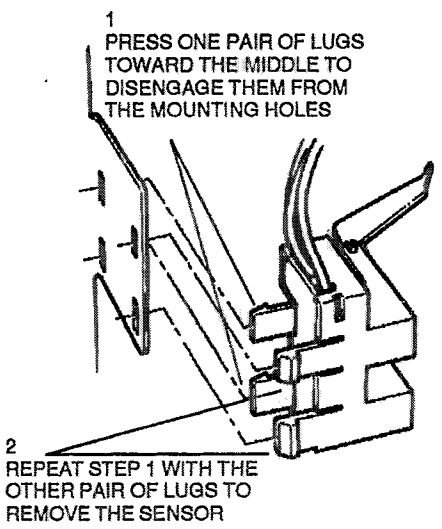


Figure 1. Timing sensor removal

Replacement

1. Use a pair of pliers to help insert the new sensor into the mounting holes.

CAUTION

The timing sensor can be easily damaged; Do not use excessive force.

2. The replacement procedure is the reverse of the removal procedure.
3. Go to System Checkout in Section 1.

REP 8.9 Tray 2 feed shaft

Parts List on PL 18

Removal

1. Remove tray 2 from the printer (REP 7.5).
2. (Figure 1) Remove the tray 2 paper feed shaft.

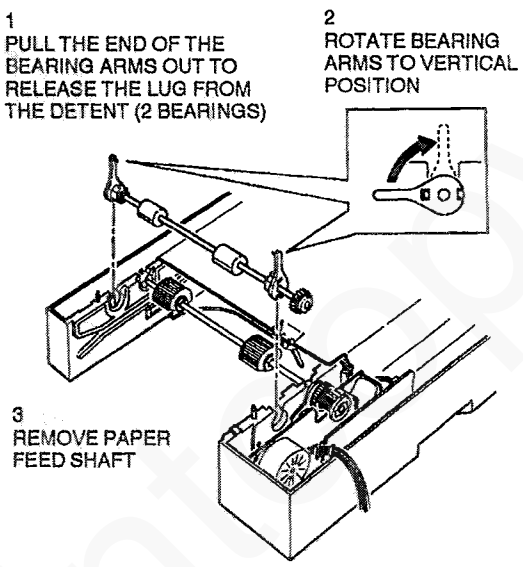


Figure 1. Tray 2 feed shaft removal

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Lubricate the left-hand end of the feed shaft with a small amount of conductive grease (70E110), to ensure good continuity with the ground contact.
3. Go to System Checkout in Section 1.

REP 14.13 Tray 2 rubber foot

Parts List on PL 18

Removal

1. Remove tray 2 from the printer (REP 7.5).
2. (Figure 1) Identify the rubber foot to be removed. To remove rubber foot 'A' or 'B', proceed to Figure 1, step 7; to remove rubber foot 'C' or 'D', proceed to step 3. below.
3. Remove the cassette feed roller assembly (REP 7.8).
4. (Figure 1) Proceed to Figure 1, step 1 to remove rubber foot 'C' or 'D'.

Replacement

1. The replacement procedure is the reverse of the removal procedure.
2. Go to System Checkout in Section 1.

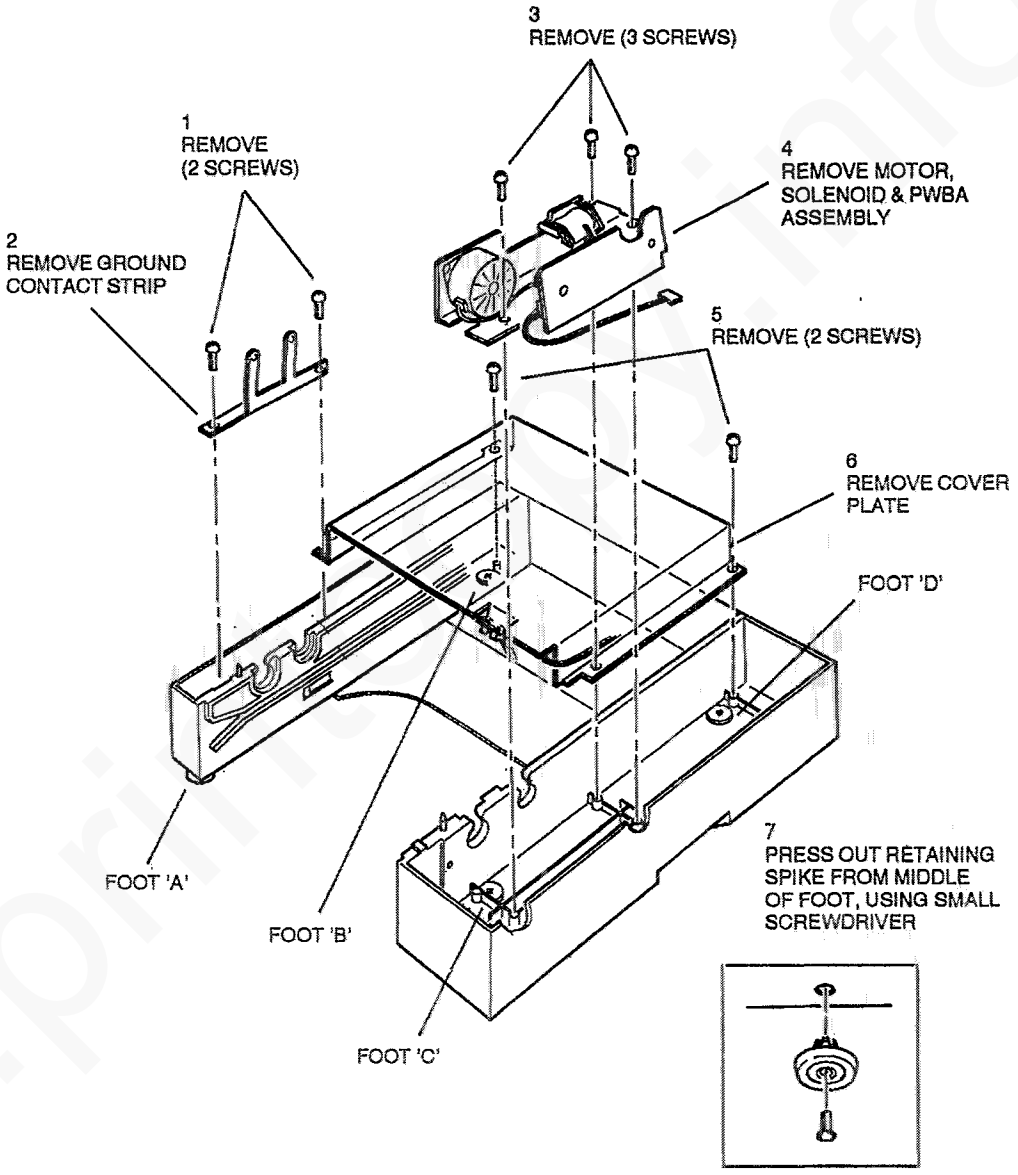


Figure 1. Rubber foot removal

ADJ 7.3 Cassette feed clutch spring lubrication

Purpose

The cassette feed clutch spring requires periodic lubrication.

Procedure

CAUTION

Use only the specified lubricant. Only lubricate the part described in this procedure. Avoid excessive lubrication. Ensure that all excess lubricant is removed from the printer.

1. Remove tray 2 from the printer (REP 7.5).
2. (Figure 1) Lubricate the tray 2 cassette feed clutch spring as indicated.

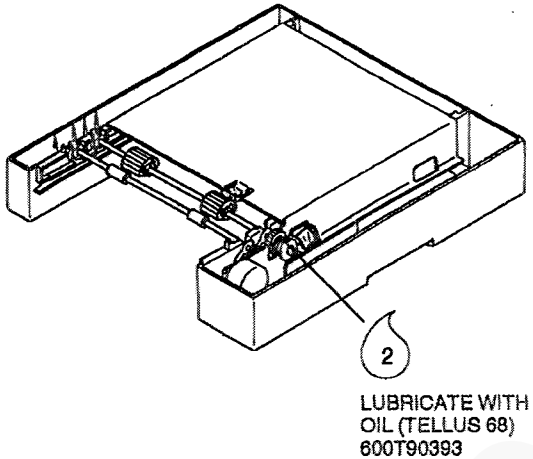


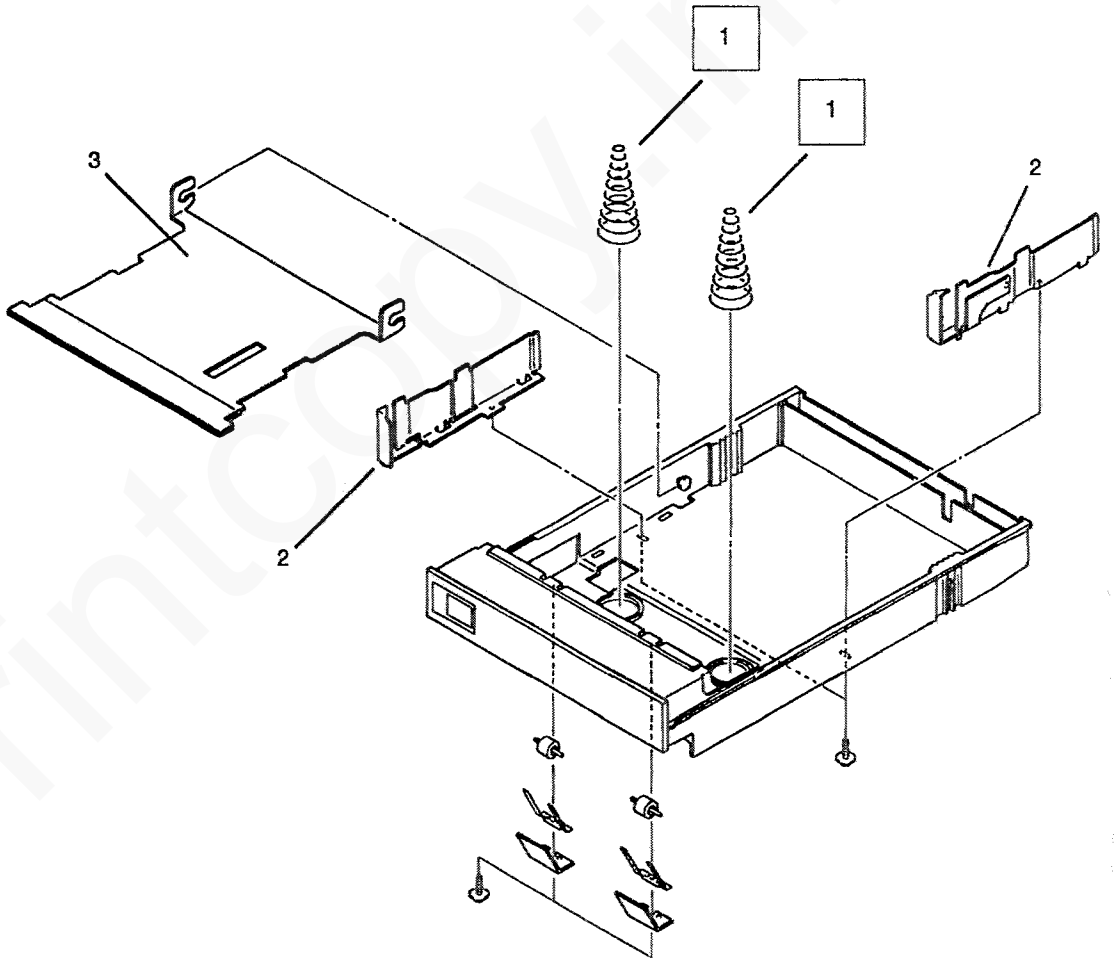
Figure 1. Cassette feed clutch spring lubrication

3. Wipe off any excess lubricant.
4. Reinstall tray 2.

Notes

PL 17 Tray 2 Paper Tray

Item	Part	Description
1	9E42420	CASSETTE SPRING
2	--	SNUBBER BRACKET
3	--	SPRUNG PLATE
	50E08200	A4 SIZE PAPER TRAY
	50E08210	LETTER SIZE PAPER TRAY

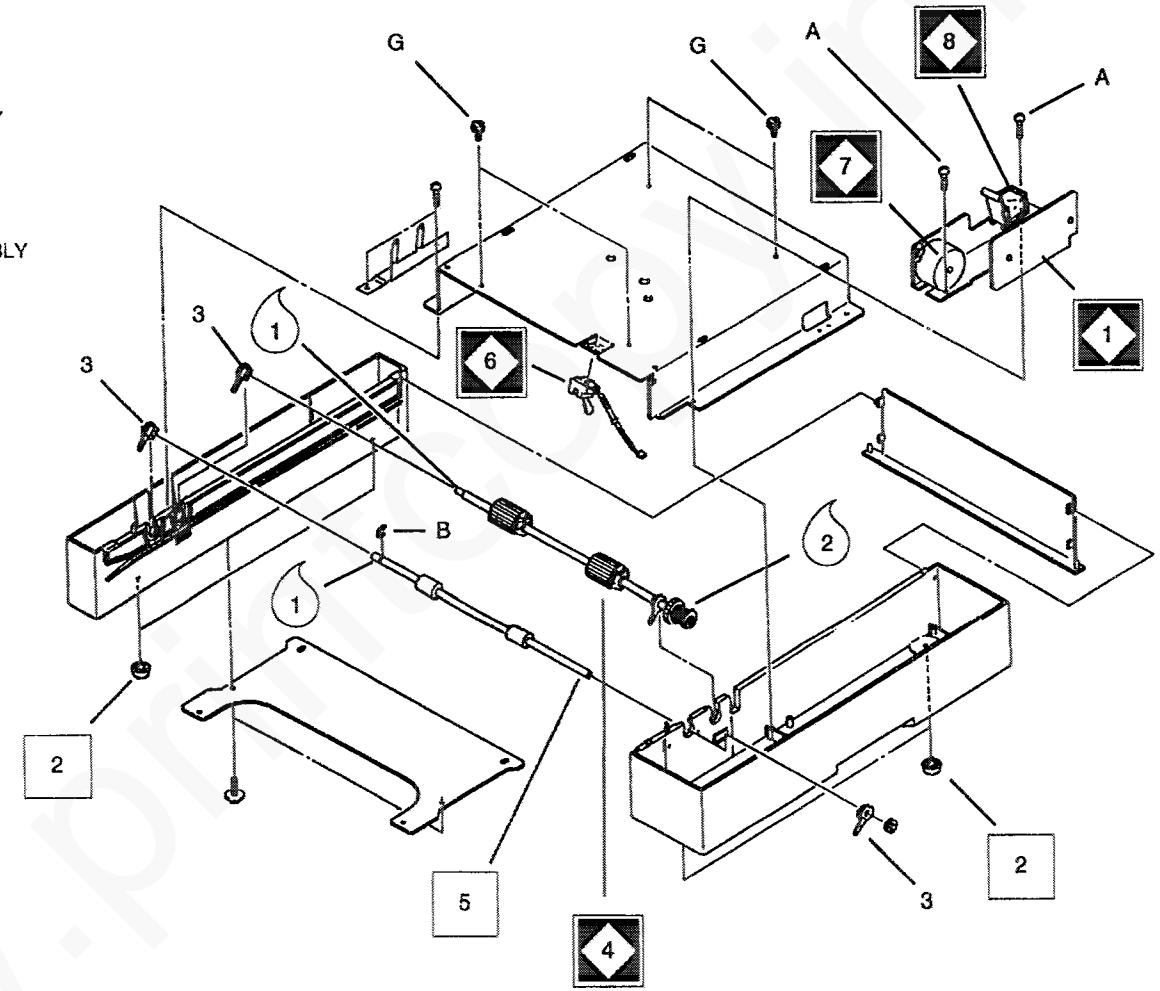


PL 18 Tray 2

Item	Part	Description
1	15E25710	PWB (including harness)
2	180E04700	RUBBER FOOT
3	--	PLASTIC BUSH
4	22E11930	CASSETTE FEED ROLLER ASSEMBLY
5	6E31670	PAPER FEED SHAFT
6	130E05160	PAPER FEED SENSOR
7	127E07350	MOTOR
8	121E07640	CASSETTE FEED SOLENOID ASSEMBLY
A	26E30300	SCREW (T 4 x 12)
B	28E30310	E-RING (E4)
G	26E30320	SCREW

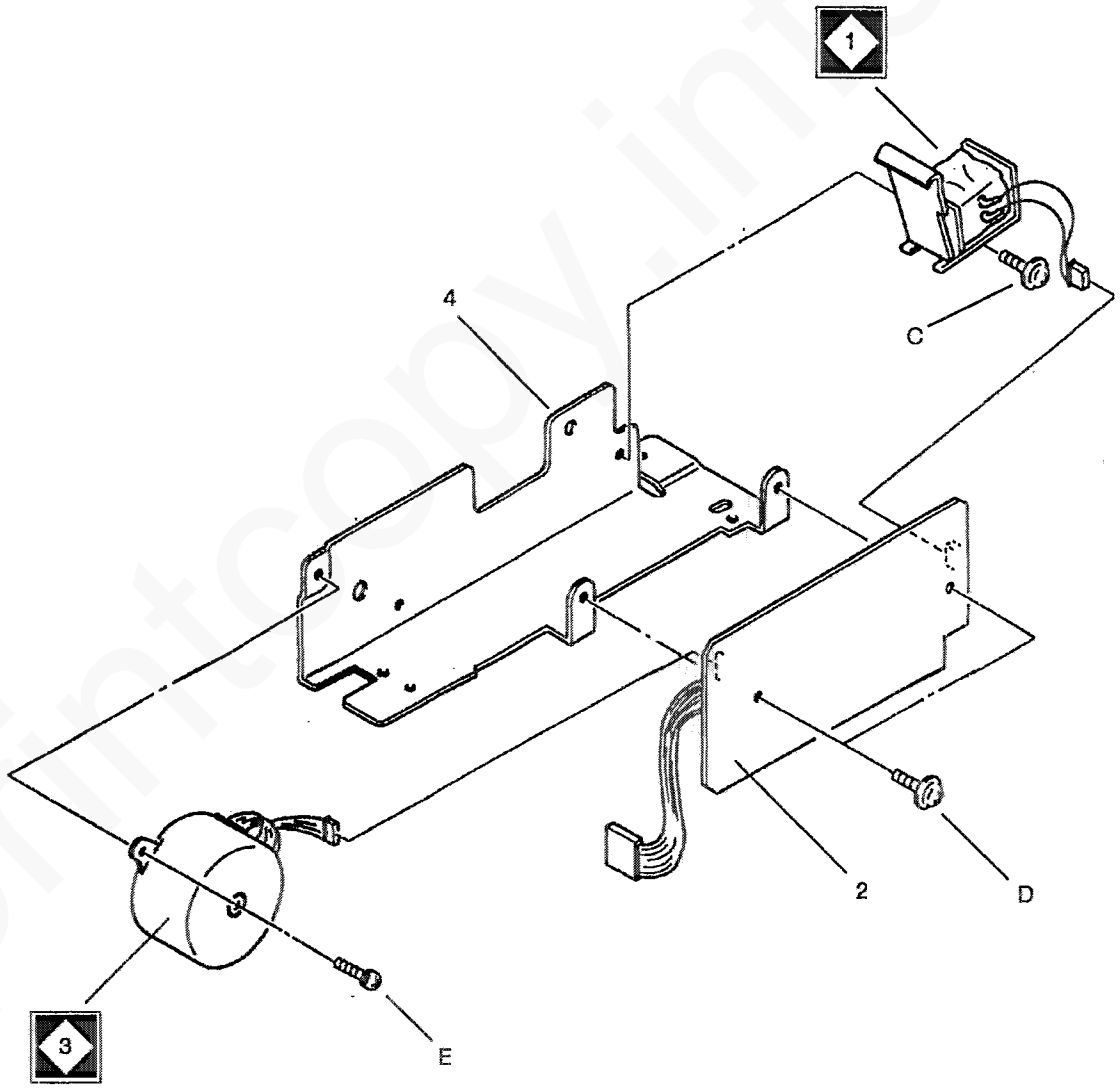
Lubricants

No.	Part	Description
1	70E110	CONDUCTIVE GREASE
2	600T90393	OIL (TELLUS 68)



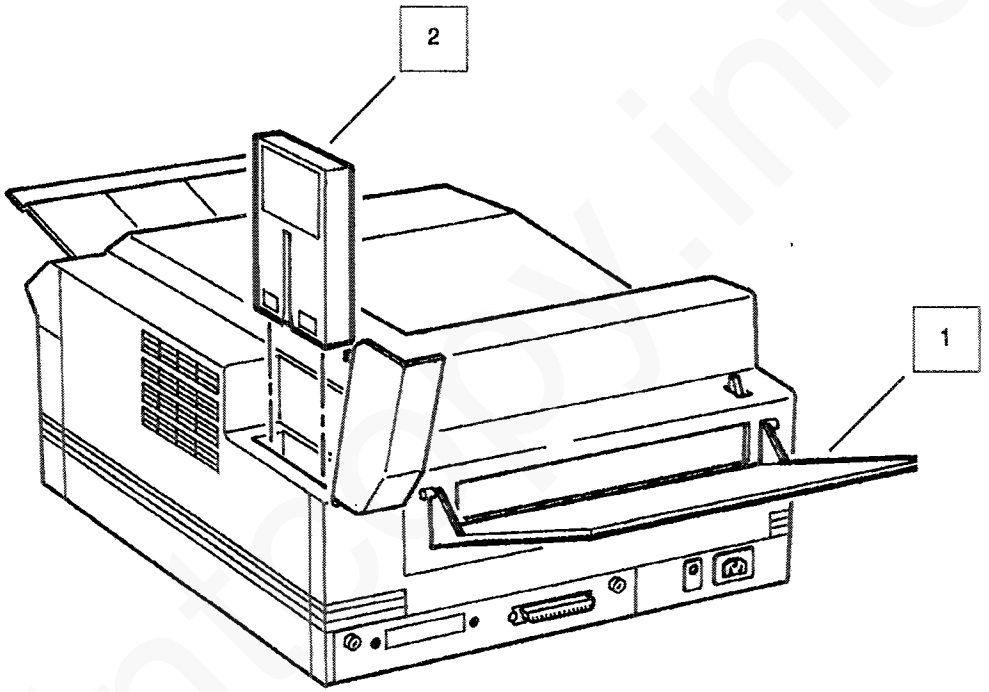
PL 19 Tray 2 PWB, Cassette Feed Solenoid & Motor

Item	Part	Description
1	121E07640	CASSETTE FEED SOLENOID ASSEMBLY
2	15E25710	PWB (INCLUDING HARNESS)
3	127E07350	MOTOR
4	--	GEARBOX & MOTOR MOUNTING PLATE
C	26E30330	SCREW (T 3 x 6)
D	26E30340	SCREW (SMW 3 x 6)
E	26E30350	SCREW (P 3 x 5)



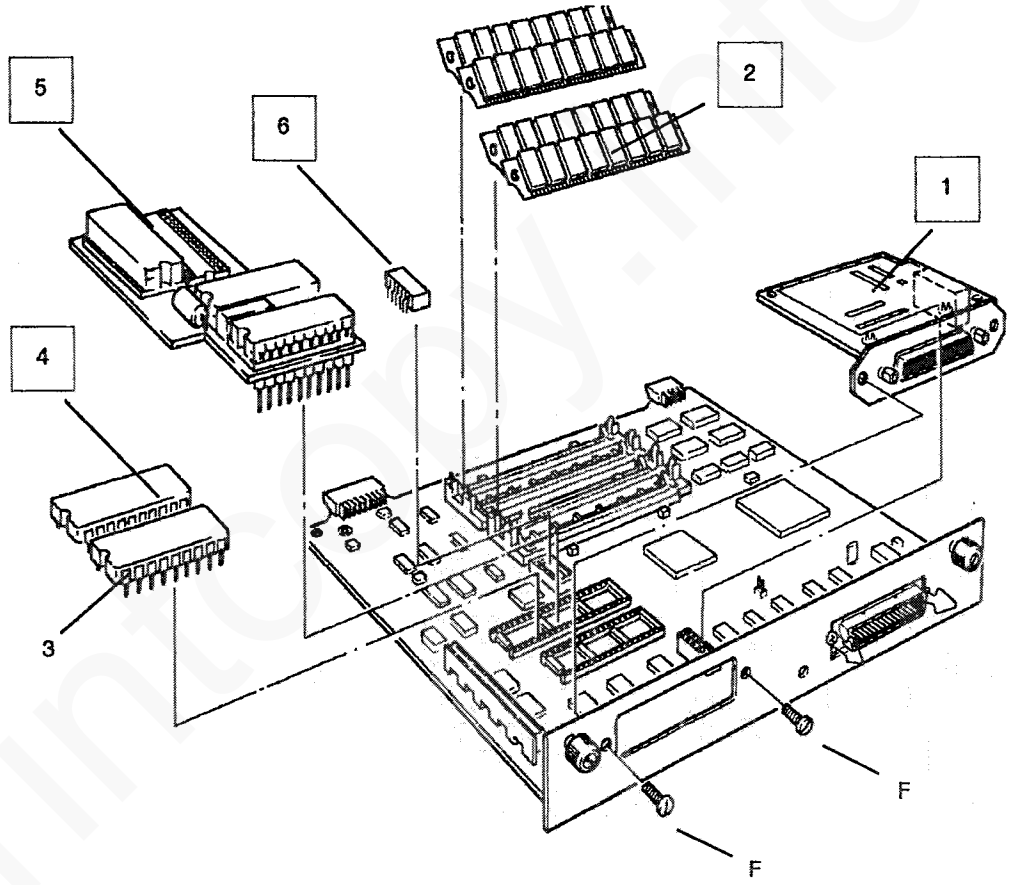
PL 20 Face-up Output Tray, Font Cartridges & Page Description Language

Item	Part	Description
1	9R92444	FACE-UP OUTPUT TRAY
2	9R84024	FONT CARTRIDGE (Dutch proportional 1)
2	9R84025	FONT CARTRIDGE (International 1)
2	9R84026	FONT CARTRIDGE (Prestige Elite)
2	9R84027	FONT CARTRIDGE (Letter Gothic)
2	9R84029	FONT CARTRIDGE (Legal Elite)
2	9R84030	FONT CARTRIDGE (Legal Courier)
2	9R84031	FONT CARTRIDGE (Math Elite)
2	9R84032	FONT CARTRIDGE (Math TMS)
2	9R84033	FONT CARTRIDGE (Courier P & L)
2	9R84034	FONT CARTRIDGE (Prestige Elite P & L)
2	9R84035	FONT CARTRIDGE (Letter Gothic P & L)
2	9R84036	FONT CARTRIDGE (Dutch P & L)
2	9R84037	FONT CARTRIDGE (Memo 1)
2	9R84038	FONT CARTRIDGE (Presentations 1)
2	9R84039	FONT CARTRIDGE (Tax 1)
2	9R84040	FONT CARTRIDGE (Forms Portrait)
2	9R84041	FONT CARTRIDGE (Forms Landscape)
2	9R84042	FONT CARTRIDGE (3 0f 9 OCR-A)
2	9R84043	FONT CARTRIDGE (EAN UPC OCR-8)
2	9R84044	FONT CARTRIDGE (PC Courier 1)
2	9R84045	FONT CARTRIDGE (Dutch & Swiss)
2	9R84046	FONT CARTRIDGE (Courier Document 1)
2	9R84047	FONT CARTRIDGE (Report 1)
3	97K09420	PAGE DESCRIPTION LANGUAGE (ImageScript 2 or XScript 3)



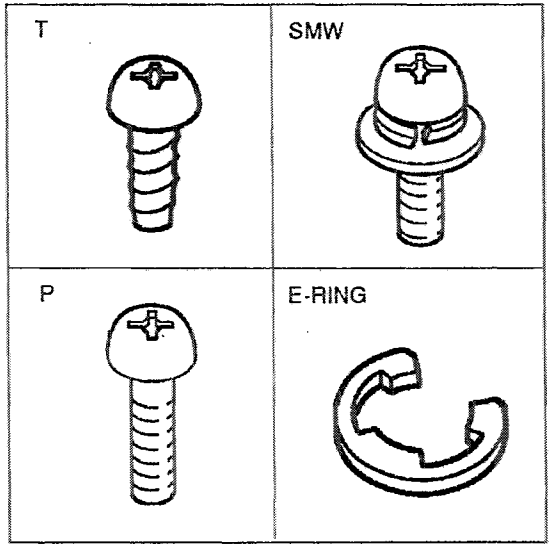
PL 21 Serial Interface, Additional Memory & Additional Emulations

Item	Part	Description
1	140K39330	SERIAL COMMS PWBA
2	140K39340	1 MBYTE MEMORY SIMM PWBA
3	538E01430	PCL EPROM 1
3		PCL 5, 2M ROM 1
3		PCL 5 INTERIM ROM
4	538E01440	EMULATIONS ROM 2
4		PCL 5, 512K ROM 2
5		PCL 5 INTERIM DAUGHTER BOARD
6		PCL 5 PAL IC
F	113W54055	SCREW (M3 x 4)
		PCL 5 INTERIM KIT consists of items 5 (daughter board & 3 I/Cs) and 3 (1 I/C).
	9R92457	PCL 5 KIT (consists of items 3, 4 and 6.)



Common Hardware

Item	Part	Description
	600K32890	TRAY 2 COMMON HARDWARE KIT
A	26E30300	SCREW (T 4 x 12)
B	28E30310	E-RING (E-5)
C	26E30330	SCREW (T 3 x 6)
D	26E30340	SCREW (SMW 3 x 6)
E	26E30350	SCREW (P 3 x 5)
F	113W54055	SCREW (M3 x 4)
G	26E30320	SCREW



Part Number Index

Part Number	PL Loc	Part Number	PL Loc
6E31670	18	600K32890	CH
9E42420	17	600T90393	18
9R92444	20		
9R84024	20		
9R84025	20		
9R84026	20		
9R84027	20		
9R84029	20		
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26E30340	19		
26E30350	19		
28E30310	18		
50E08200	17		
50E08210	17		
70E110	18		
97K09420	20		
113W54055	21		
121E07640	19		
127E07350	19		
130E05160	18		
140K39330	21		
140K39340	21		
180E04700	18		
538E01430	21		
538E01440	21		

CN Index

Locate the source connector in the left column of the index; note that the column is in numeric/alphanumeric order. Refer to the right-hand Figure Number column to identify the CN Location figure number. The PWBA column identifies the PWBA on which the CN is fitted. The Destination/Source column identifies the PWBA or component each CN connects to.

CN No.	PWBA	Destination/ Source	Figure
CN 1	Tray 2	IOT controller PWBA	1
CN 2	Tray 2	Tray 2 paper feed sensor	1
CN 3	Tray 2	Tray 2 motor	1
CN 4	Tray 2	Cassette feed solenoid	1

PWB Locations

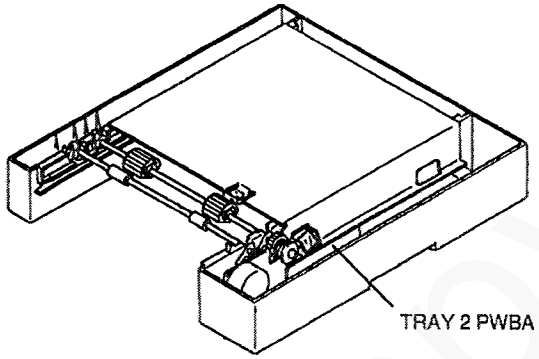

Figure 1. Tray 2 PWBA location

CN Locations

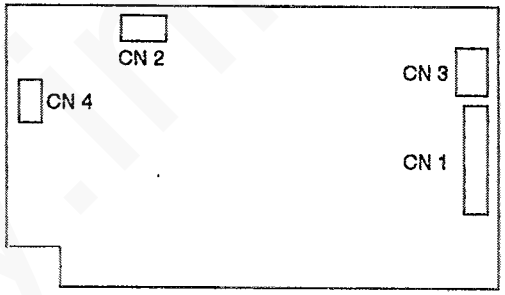

Figure 1. Tray 2 PWBA CN location

Notes

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